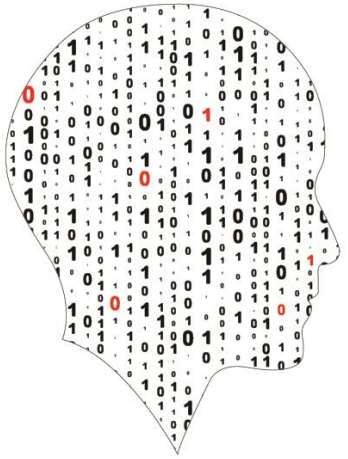
PDST
Professional Development Service for Teachers
An tSeirbhís um Fhorbairt Ghairmiúil do Mhúinteoirí

An Roinn Oideachais agus Scileanna
Department of Education and Skills

National Workshop 1



LEAVING CERTIFICATE
COMPUTER SCIENCE

Meet the PDST LCCS Team

Joe English
joeenglish@pdst.ie

Tony McGennis
tonymcgennis@pdst.ie

Sinéad Crotty
sineadcrotty@pdst.ie

Neil Butler
neilbutler@pdst.ie

Helen Van Eesbeck
helenvaneesbeck@pdst.ie

Post-Primary STEM Team Leader

Schedule

Session 1	Introduction to Leaving Certificate Computer Science (LCCS)
11.10 – 11.30	Tea/Coffee
Session 2	LCCS Learning Outcomes and Applied Learning Tasks (ALTs)
13.00 – 14.00	Lunch
Session 3	Computational Thinking Teaching and Learning Programming for LCCS Q&A

Key Messages for National Workshop 1 (NW1)

There are many ways to use the LCCS specification.

ALTs

ALTs provide an opportunity to teach theoretical aspects of LCCS.

All learning outcomes (LOs) are interwoven and should be studied concurrently at different stages of the course and should NOT be studied in a linear order

Digital technologies can be used to enhance collaboration, learning and reflection.

LCCS can be mediated through a constructivist pedagogical approach.

LCCS is a subject for everyone

Computer Science is for ALL

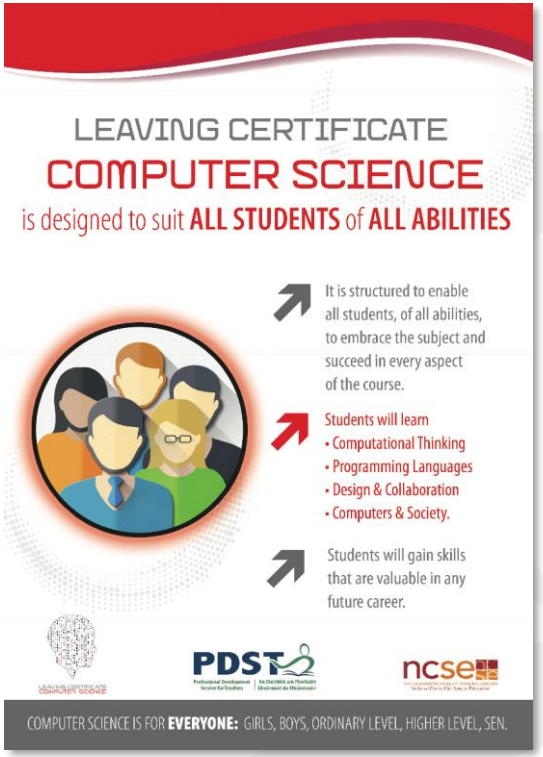
Computer Science is the study of algorithms and programming, and the impact of computers on society. It is about finding automated solutions to almost any problem you can imagine.

LCCS is structured to enable all students, of all abilities, to embrace this subject and succeed in every aspect of the course.

CsforALL

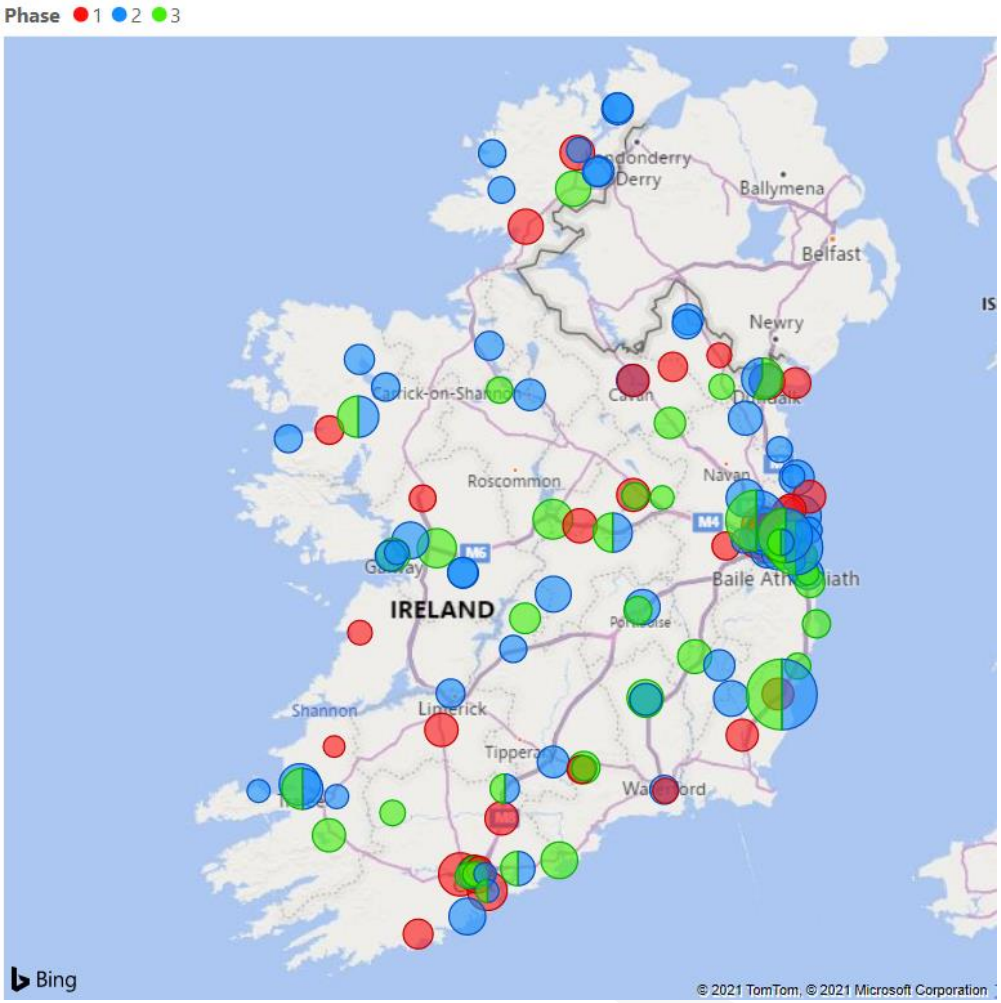
‘It applies to many aspects of students’ lives and is therefore relevant to a wide range of student interests.’

Every career choice will increasingly require both digital and computer science literacy.



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

Culture and Expectations


Phase 1 2 3
Londonderry
Derry
Ballymena
Belfast
Newry
Carrick-on-Shannon
Cavan
Roscommon
Navan
M4
M5
Galway
IRELAND
Shannon
Limerick
Tipperary
Waterford
Bing
© 2021 TomTom, © 2021 Microsoft Corporation


Londonderry
Derry
Ballymena
Belfast
Newry
Carrick-on-Shannon
Cavan
Roscommon
Navan
M1
M4
M5
IRELAND
Shannon
Limerick
Tipperary
Waterford
Tralee
M8

Teachers are the Key

Leader & Champion

Privileged Place

Bring Different Experiences

Group Activity / Breakout

When you go into the breakout – unmute – switch on video – introduce yourselves

Questions:

1. What should the culture be in the group?
2. What expectations do you have from each other?
3. Discuss in groups and respond using menti.com

   The menti code will be broadcast to the breakout room

Mentimeter

URL = www.menti.com

Code = 9968 5545

Go to **www.menti.com** and use the code **10 78 86**

Mentimeter

What should be the culture in this group? What expectations do you have from each other?

support learning help collaboration

a shared learning journey of collaboration and support

Open and willing to share resources and experiences. Pass on good practice. Model on open source

Cooperation, sharing resources, support for each other, strategies of good teaching & learning practice in CS

Share Resources

The culture should be one of collaboration.

supportive, approachable, sharing ideas, positivity

collaboration and patience

Sharing

Pause scroll | Show image

116

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

The Role of the PDST

The Role of the PDST

What we are not

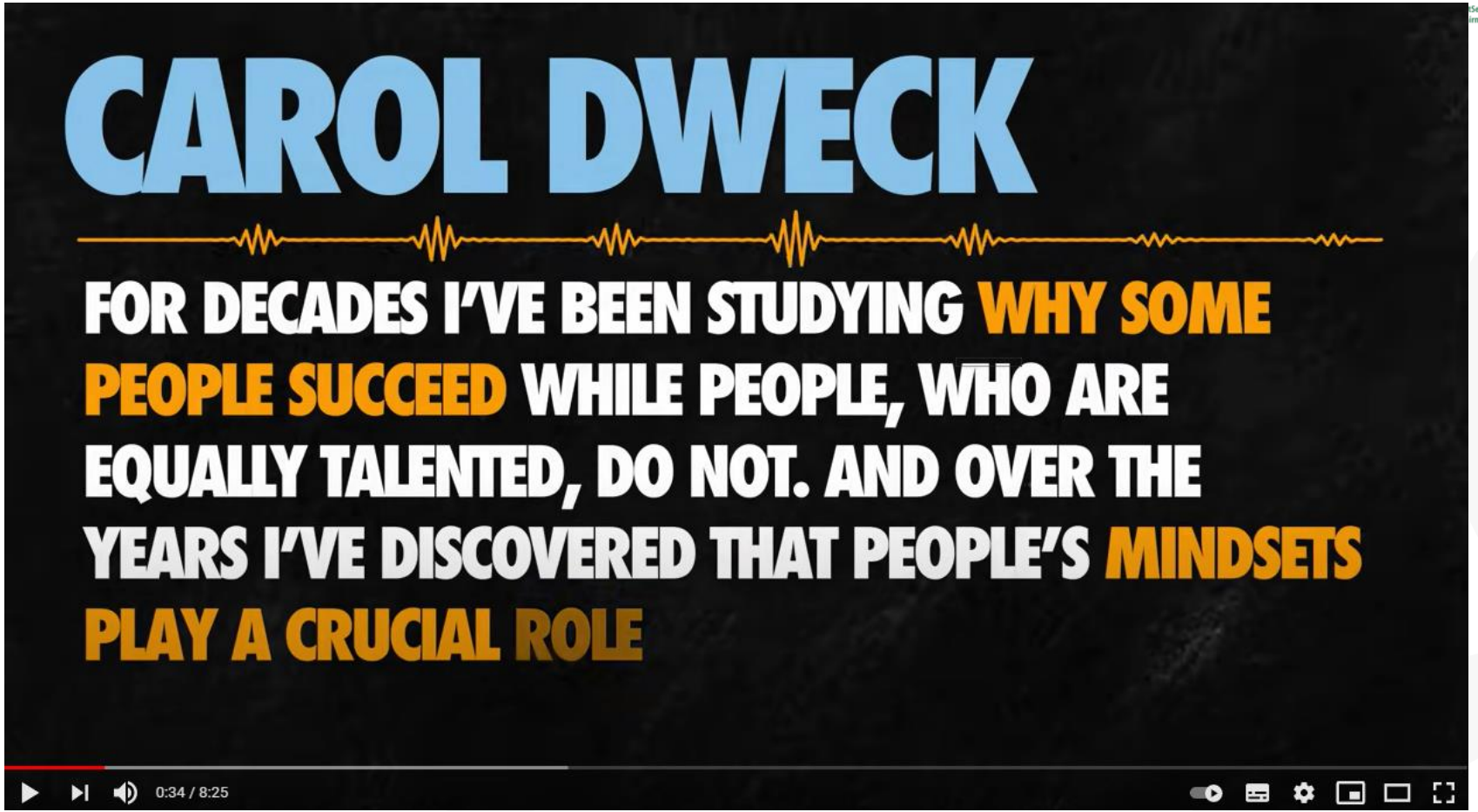
- Evaluators
- Policy makers
- Curriculum developers
- Assessors

What we are

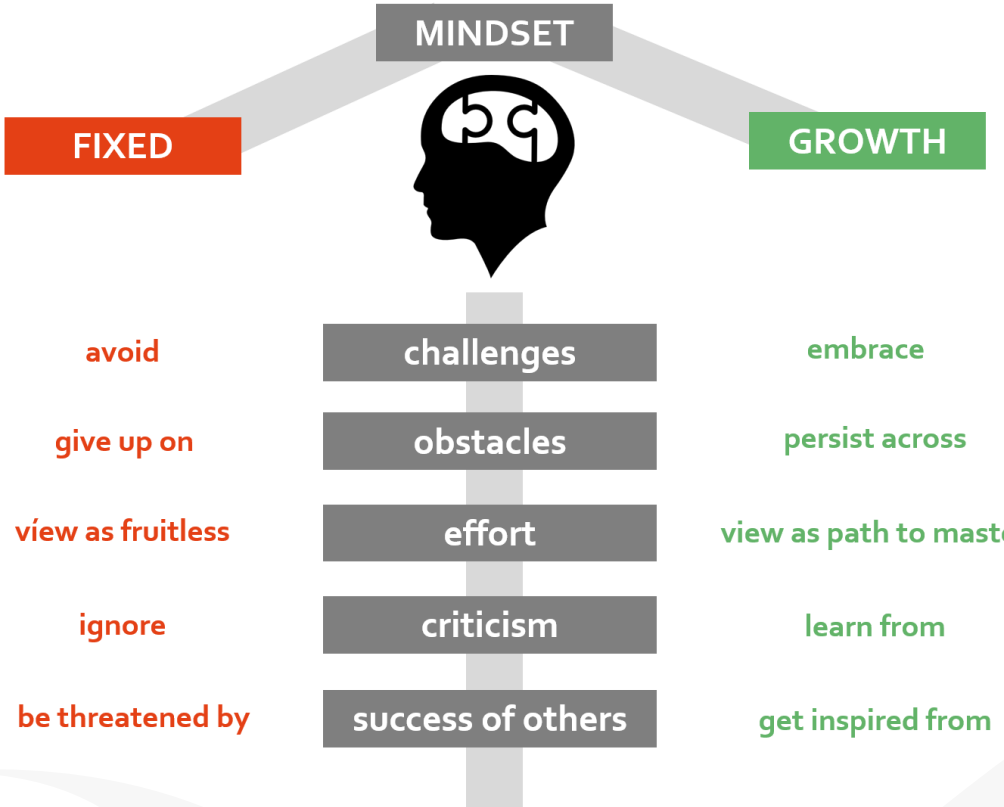
- Teachers & school leaders
- Teacher Educators
- Facilitators / Enablers
- Purveyors of lifelong learning

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

Growth Mindset


CAROL DWECK
FOR DECADES I'VE BEEN STUDYING WHY SOME PEOPLE SUCCEED WHILE PEOPLE, WHO ARE EQUALLY TALENTED, DO NOT. AND OVER THE YEARS I'VE DISCOVERED THAT PEOPLE'S MINDSETS PLAY A CRUCIAL ROLE
0:34 / 8:25

Growth Mindset



THE POWER OF YET!

Movement break

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

CPD Framework Overview

slack

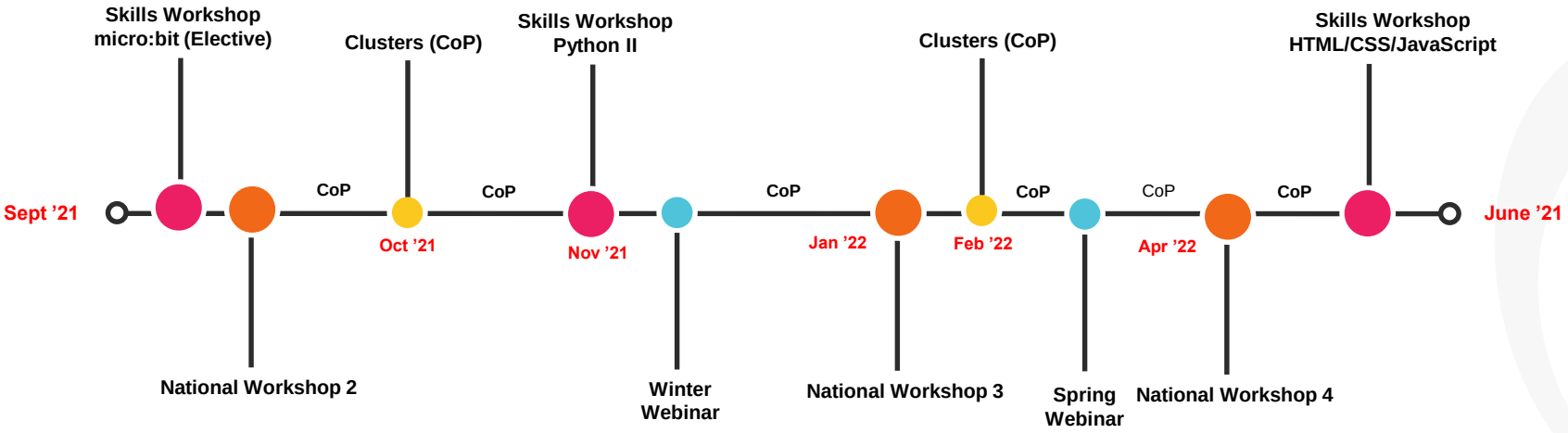
COMPSCI.IE

Community of Practice

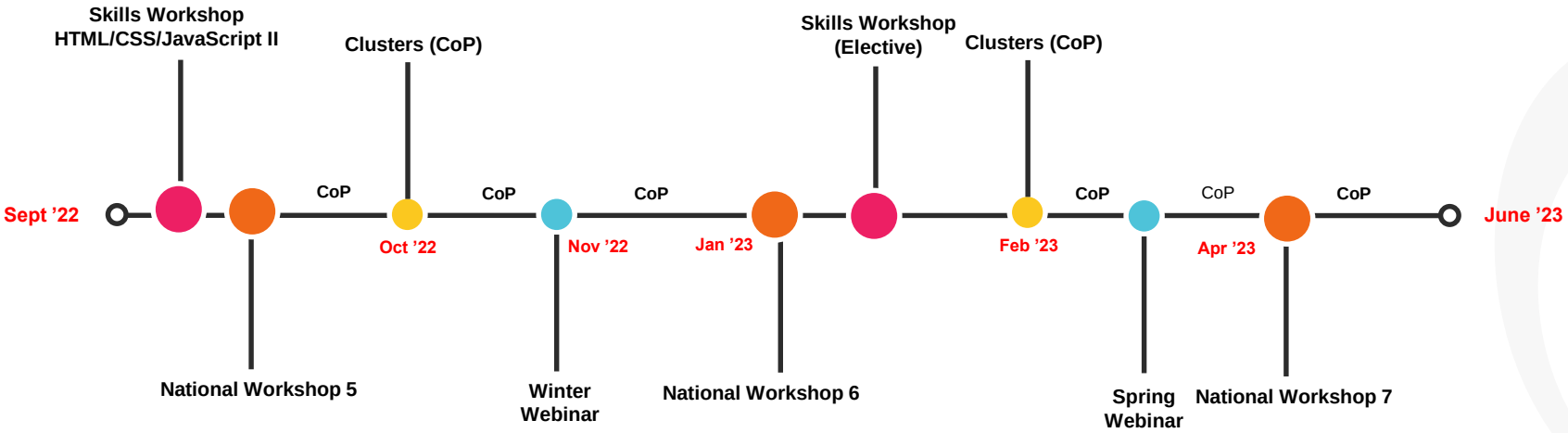
Phase 1 Mentor

Overview of Framework

Timeline – Round 0

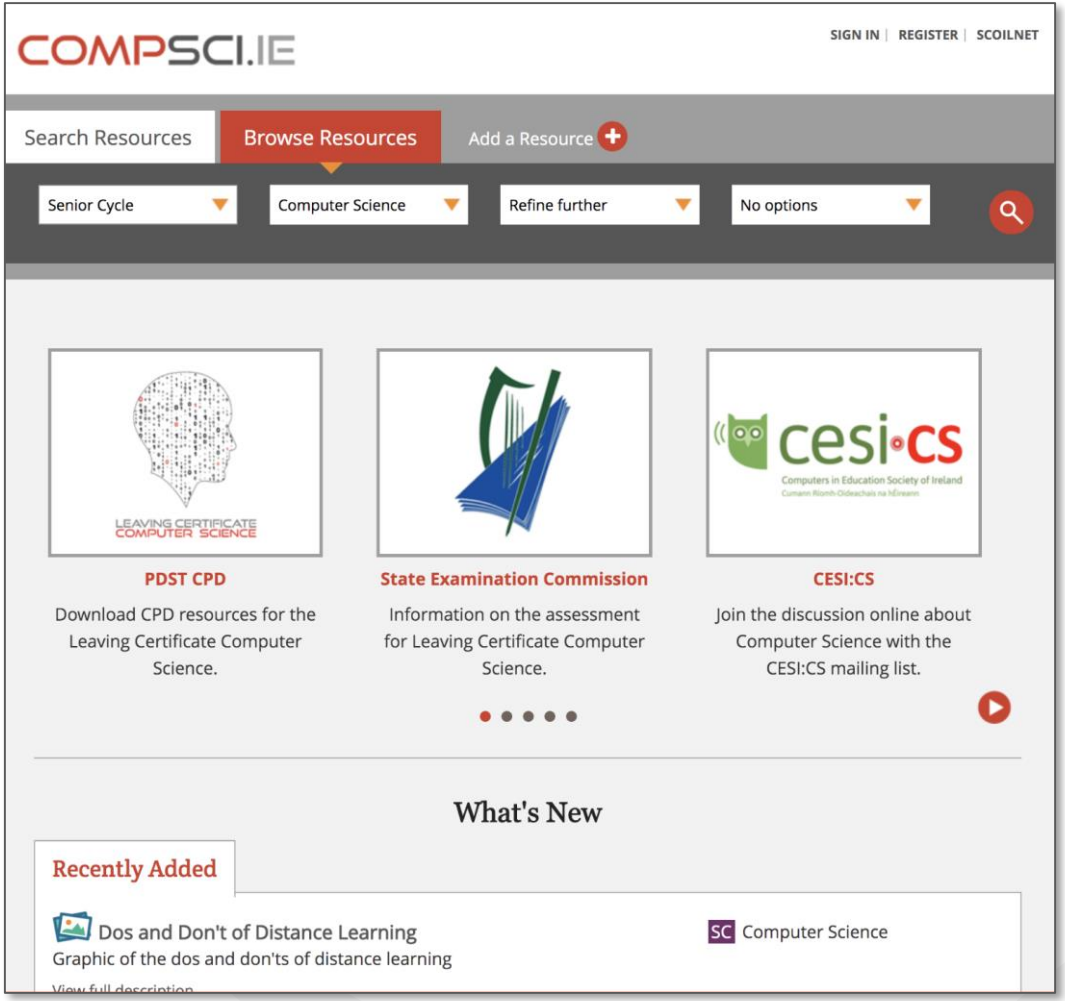


Timeline – Round 1 – 5th Year (subject to DE approval)



Timeline – Round 2 – 6th Year (subject to DE approval)

LCCS Community of Practice

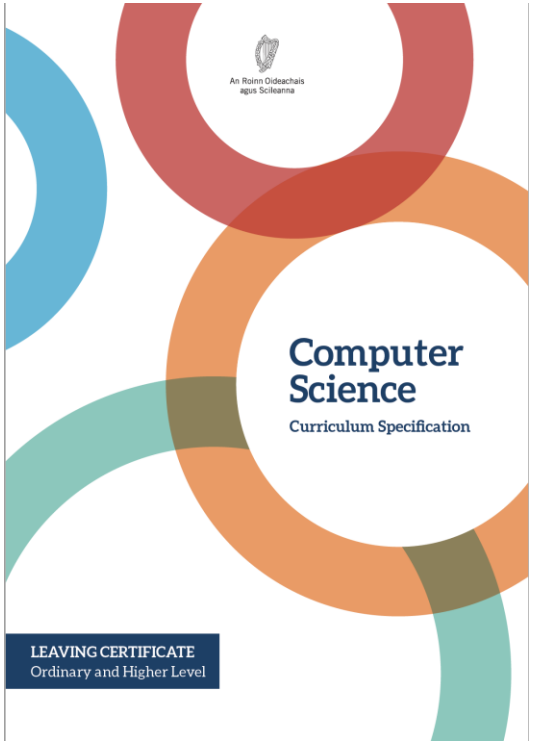

COMPSCI.IE
SIGN IN | REGISTER | SCOILNET
Search Resources
Browse Resources
Add a Resource
Senior Cycle
Computer Science
Refine further
No options
LEAVING CERTIFICATE COMPUTER SCIENCE
PDST CPD
Download CPD resources for the Leaving Certificate Computer Science.
State Examination Commission
Information on the assessment for Leaving Certificate Computer Science.
cesi·cs
Computers in Education Society of Ireland
CESI:CS
Join the discussion online about Computer Science with the CESI:CS mailing list.
What's New
Recently Added
Dos and Don't of Distance Learning
Graphic of the dos and don'ts of distance learning
SC Computer Science

CESI - Teacher Professional Network (TPN) for Computer Science

Group Activity

Exploring the Curriculum Specification

Leaving Certificate Computer Science Curriculum Specification



Group Activity / Zoom Breakout

‘Home Expert’ Activity - Instructions

1. Each group will be given a section of the curriculum specification document to read, dissect and break down further (excluding ‘*Strands and learning outcomes’).*

2. You should nominate a chair and a note taker.

3. Use the Google doc provided to summarise your group’s main points.

4. The chair presents your findings to the other groups at the end.

‘Home Expert’ Activity - Groups

Group 1 : Senior Cycle

Group 2 : Computer Science (Rationale / Aim / Objectives)

Group 3 : Related Learning

Group 4 : Structure of LCCS

Group 5 : Key Skills of Senior Cycle

Group 6 : Teaching & Learning - ALTs

Group 7 : Teaching & Learning - Differentiation

Group 8 : Assessment

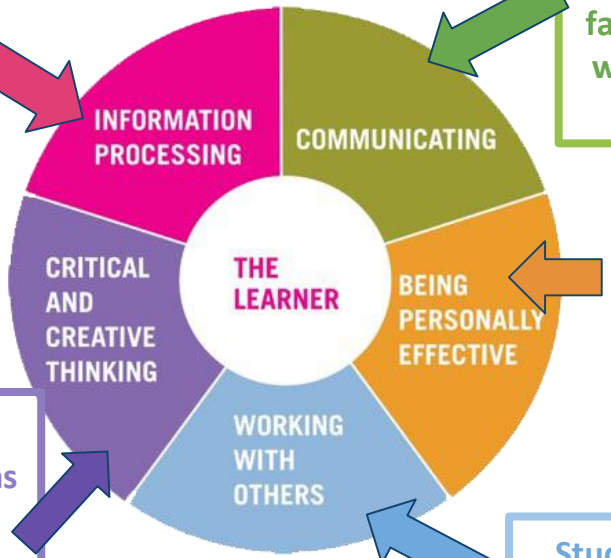
15 minutes

Group Activity: Feedback

Key Skills and the Computer Science Student

Learning in computer science takes place in an information-intensive environment; it promotes independent research activities, evaluation and recording of information and making decisions based on judgements and data. Students develop an appreciation of the differences between information and knowledge.

Through the act of collaborative project work students communicate both face to face and through digital media. Students will express and share opinions through dialogue, discussion and argument.



Students will develop the skill of being personally effective as they develop strategies for managing, monitoring and evaluating their learning

Students will develop their critical and creative thinking skills by analysing patterns and relationships, solve problems using computational thinking, developing and testing hypothesis and develops metacognition dimension of knowledge. In computer science, students are designers and creators of technology rather than merely users of technology.

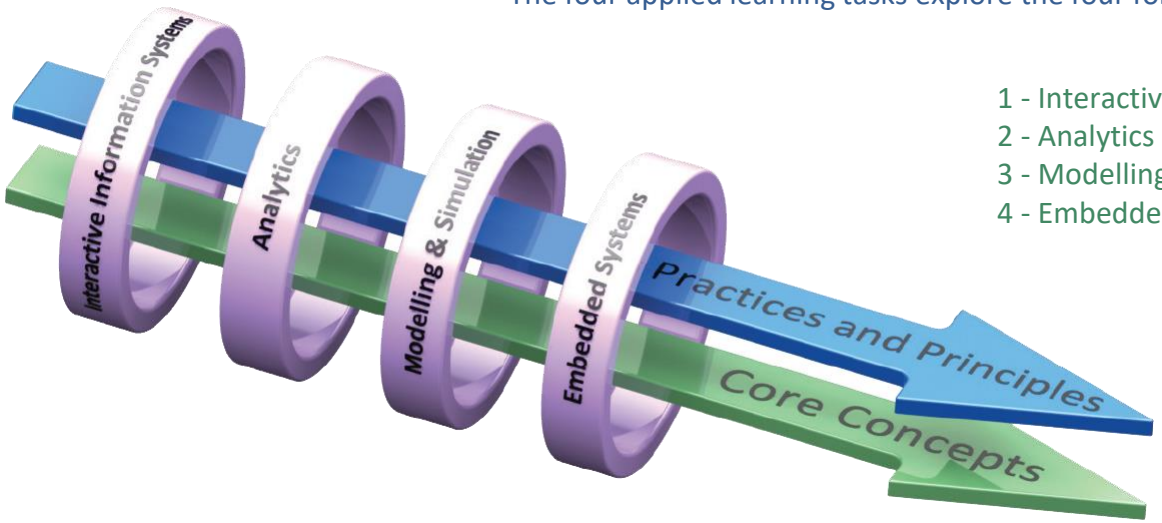
Students may work collaboratively and through this they will learn from others, but more importantly they will be engaged in a social experience involving the understanding of interpersonal dynamics

Pg 13 & 14 Specification

LCCS Strands

Strand 1: Practices and principles	Strand 2: Core concepts	Strand 3: Computer science in practice
▸ Computers and society ▸ Computational thinking ▸ Design and development	▸ Abstraction ▸ Algorithms ▸ Computer systems ▸ Data ▸ Evaluation/Testing	▸ Applied learning task 1 - Interactive information systems ▸ Applied learning task 2 - Analytics ▸ Applied learning task 3 - Modelling and simulation ▸ Applied learning task 4 - Embedded systems

LCCS Interwoven



The four applied learning tasks explore the four following contexts:

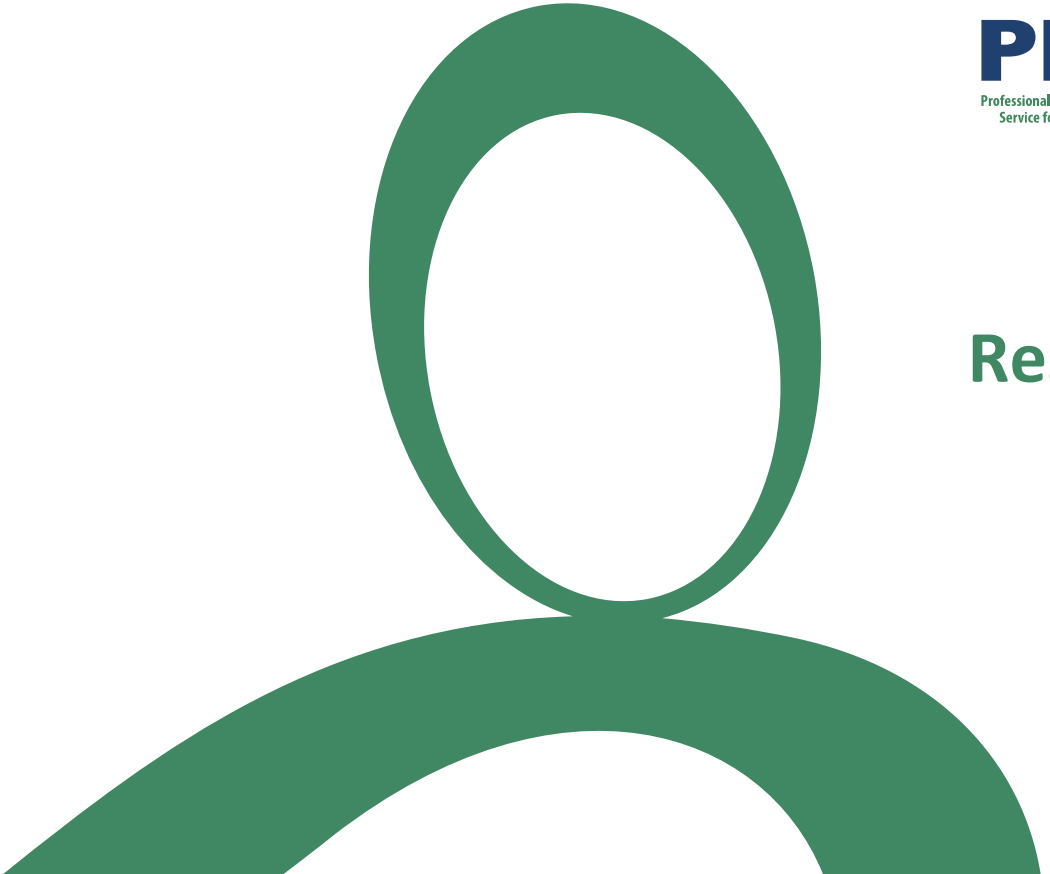
1 - Interactive information systems
2 - Analytics
3 - Modelling and simulation
4 - Embedded systems.

Key to remember:

Explore and teach the LOs through the lens of ALTs.

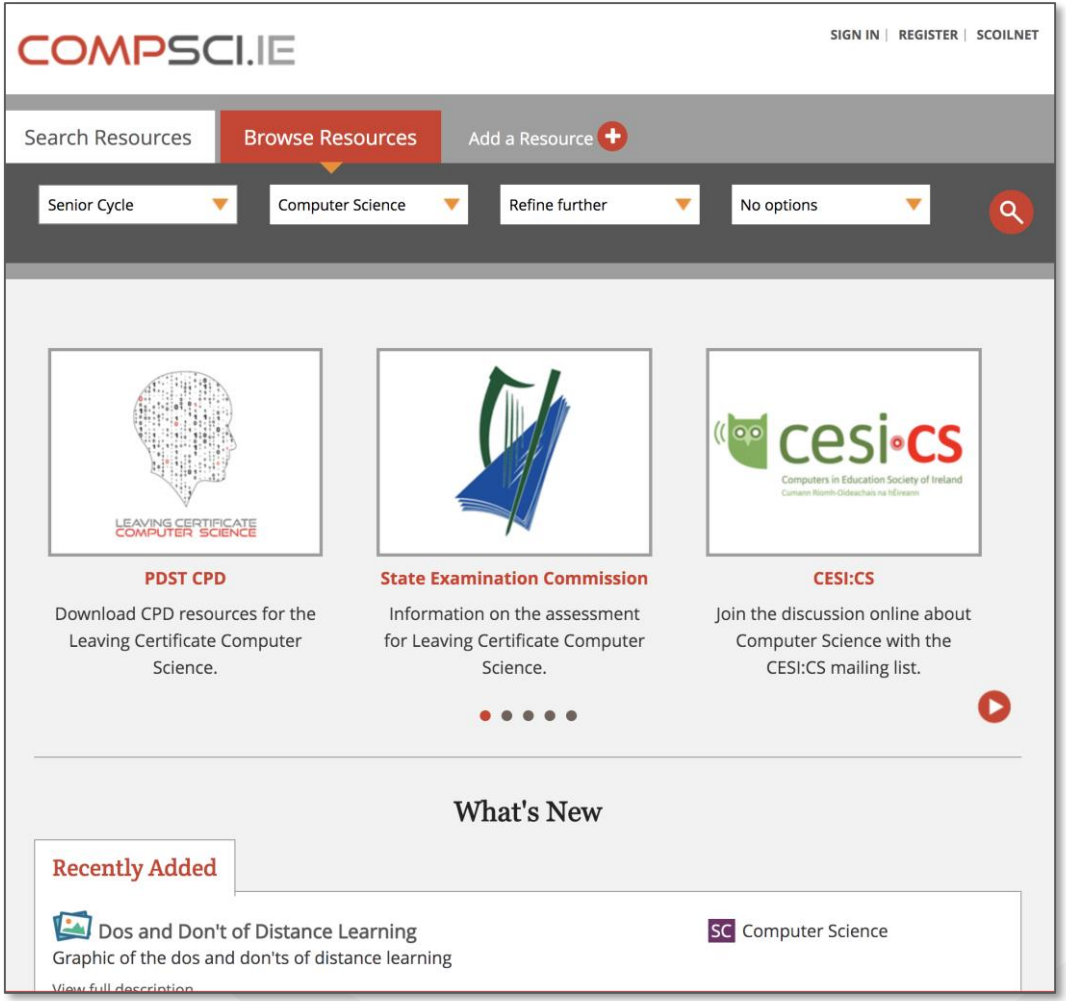
LCCS Assessment

Component	Percentage
End-of-course examination ▸ Computer-based assessment of learning outcomes	70
Coursework assessment ▸ One computational artefact with report	30
Total	100



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

Resource Development


COMPSCI.IE
SIGN IN | REGISTER | SCOILNET
Search Resources
Browse Resources
Add a Resource
Senior Cycle
Computer Science
Refine further
No options
LEAVING CERTIFICATE COMPUTER SCIENCE
PDST CPD
Download CPD resources for the Leaving Certificate Computer Science.
State Examination Commission
Information on the assessment for Leaving Certificate Computer Science.
cesi·cs
Computers in Education Society of Ireland
CESI:CS
Join the discussion online about Computer Science with the CESI:CS mailing list.
What's New
Recently Added
Dos and Don't of Distance Learning
Graphic of the dos and don'ts of distance learning
SC Computer Science
View full description

What is Compsci.ie?

Who is it for?

Why is it needed?

How does it work?

Where is my role?

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

LCCS Phase 1 Teachers - Top Tips

Go to **www.menti.com** and use the code **54 28 02**

Mentimeter

What top tip would you give the new LCCS teachers about to start their LCCS journey?

email updates at end of each class. Keep groups small.

for every topic. Pick a couple for resources for each topic that work for you or you'll be spending all your time throwing information at students

Don't Panic

Relax

Create a spreadsheet, google sites or doc template for filing all your links and code under the specific topics/learning outcomes.

Structure group work and give sample ALTs

Get students going with Python at the start - show them code, get them to predict output, moving onto getting them to write their own code. If they can code, everything else will fall into place.

Develop Python and Javascript

Pause scroll | Show image

Slide is not active | Activate

39

Tea/Coffee

An Roinn Oideachais
Department of Education