Oide

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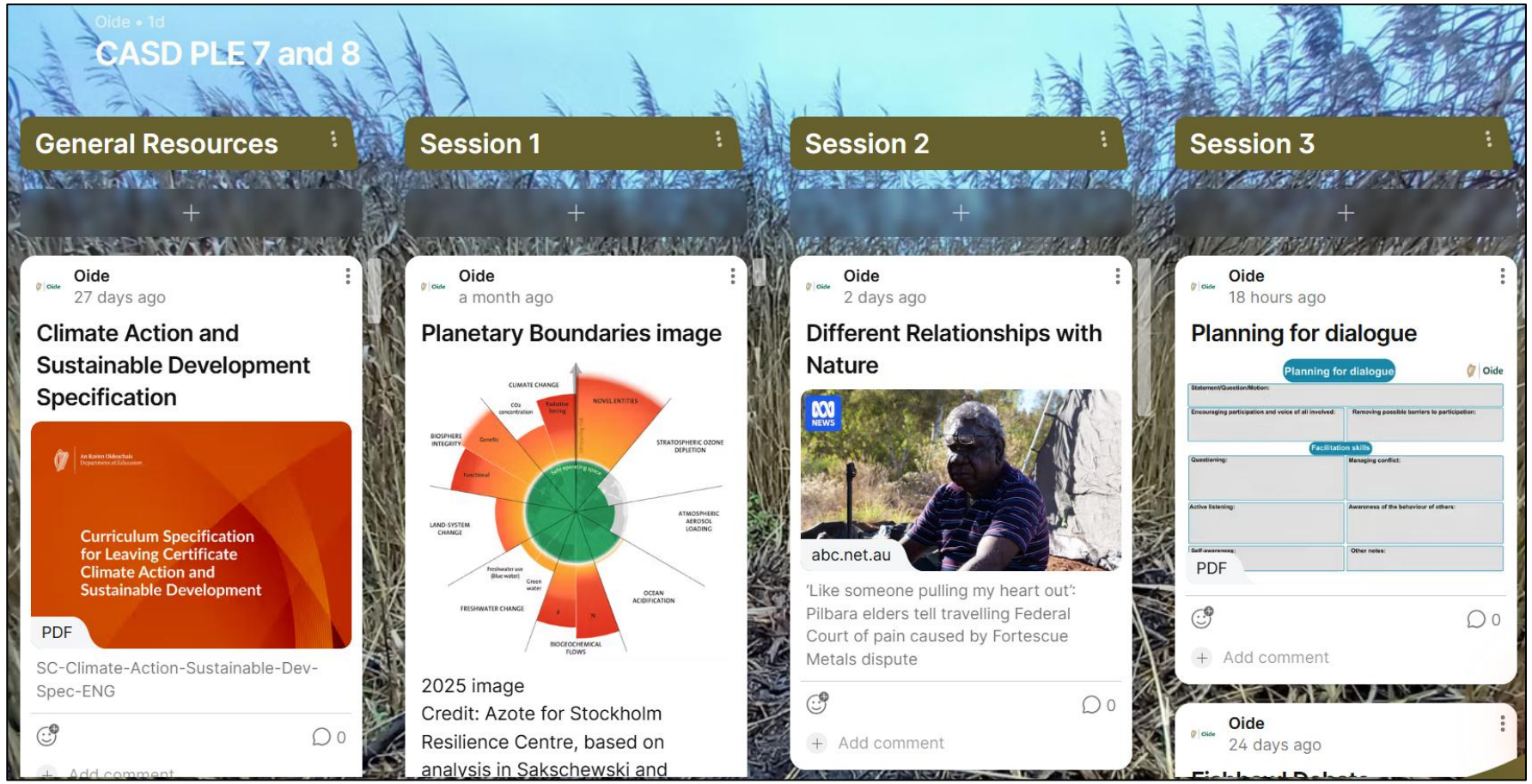
Supporting the Professional Learning of School Leaders and Teachers

Think Forward, Learn Forward

PLE 8

Padlet PLE Day 7 and 8



https://tinyurl.com/5eay2fvy

Learning Intentions Day 8

Discuss the Anthropocene through the SQ3R reading strategy and futures thinking methodologies

Investigate secondary data that demonstrates humans' role in global warming

Use effective questioning to support, guide, and model reflection for students

Oide

Oide

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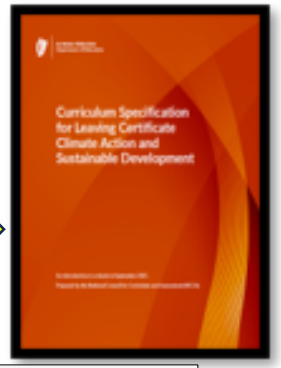
Supporting the Professional
Learning of School Leaders
and Teachers

Session 4

Learning Outcome 1.5

Students learn about	Students should be able to
	5. discuss the concept of the Anthropocene

P.14



Discuss	offer a considered, balanced review that includes a range of arguments, factors or hypotheses; opinions or conclusions should be presented clearly and supported by appropriate evidence

Imagine This!

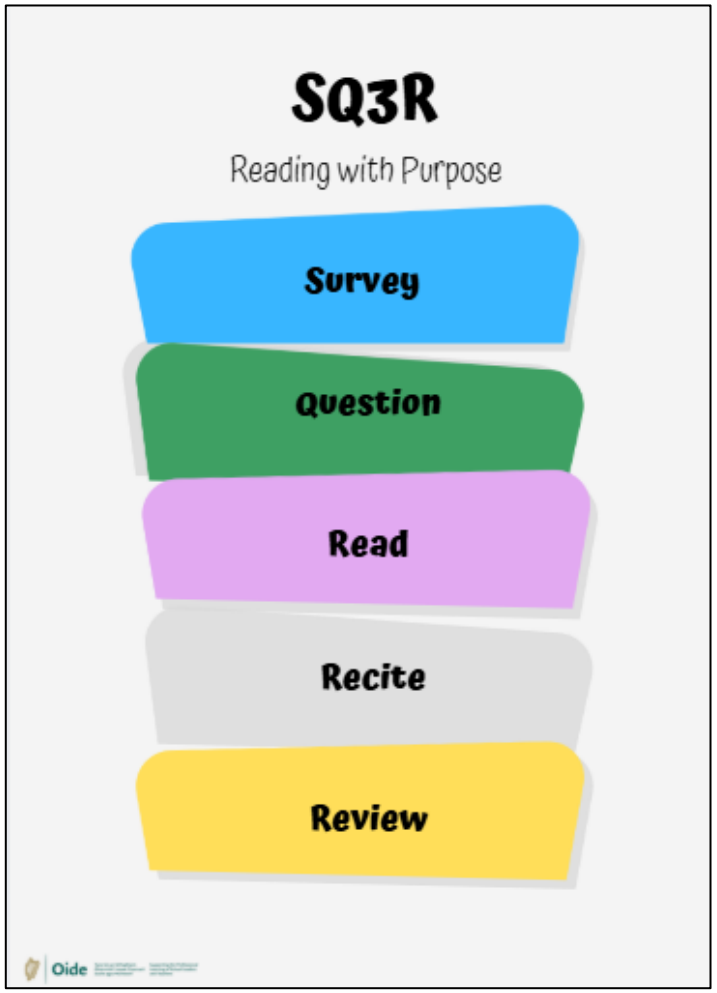
What is the Anthropocene?

The Anthropocene is an unofficial unit of geological time that refers to the period of time where human activity has had a significant impact on the Earth's climate, ecosystems and geological processes.

The Anthropocene

SQ3R

1. Survey
2. Question
3. Read
4. Recite
5. Review



What stood out for you in relation to the concept of the Anthropocene from the article? Why?

Teaching for Student Learning

The nature of action

Leaving Certificate Climate Action and Sustainable Development enables students to recognise their own agency, grow in confidence to influence change and increase their capacity to act. Across the strands of study, there is an integrated focus on learning about action, learning when to act, and learning through taking action where appropriate. The experience of the subject allows students to build on positive individual or collective actions they may have taken in earlier stages of their education, such as conserving energy and recycling. They expand their perspective on the role of collective action in affecting change, and their potential as individuals to influence what collective actions are taken. As students engage in real-world and applied learning in classroom and other settings, such as local ecosystem projects, campaigning on sustainability matters and community outreach, they develop a realistic and hopeful perspective on the nature of action, which encompasses and values individual initiative but also moves beyond it. Teachers support students to develop knowledge, skills, values and dispositions for taking effective action which:

- is collective in nature
- aims to address root causes of climate and sustainability issues, rather than just addressing symptoms
- considers power, and who has power, in a given context
- is based on solidarity with people affected by climate and sustainability issues
- is empowering and invites participation by other people and communities beyond the classroom in wider society
- contributes to and addresses transformation of global inequalities.

Futures Thinking

We cannot change the past,
but futures thinking helps us imagine
the next chapter in the Anthropocene.

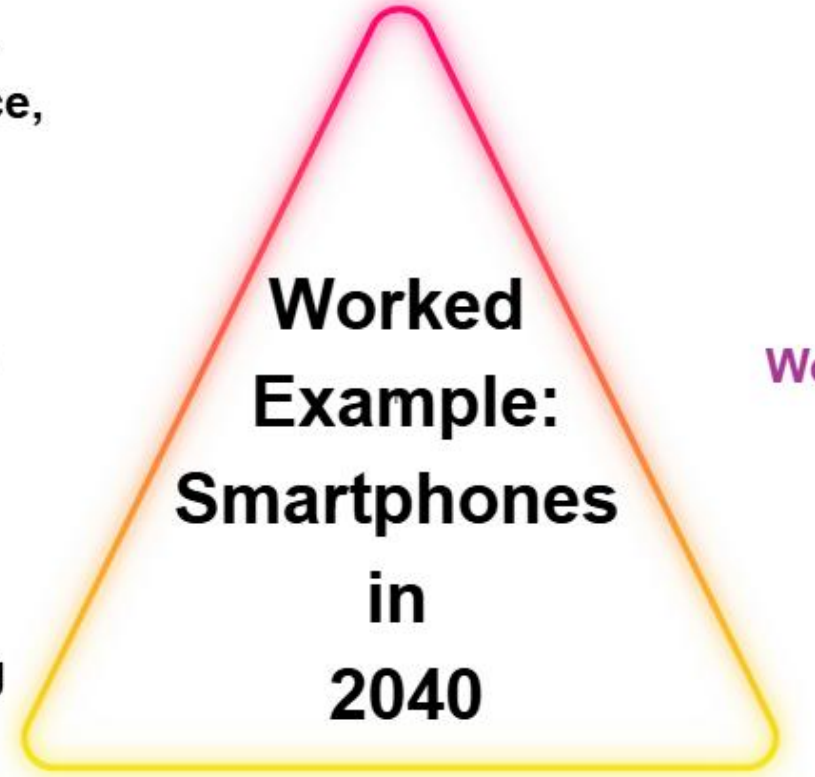
The Futures Triangle

Pull of the Future

- One device replaces wallets/keys etc.
- No screens- voice, AR etc.

Push of the Present

- Faster internet
- AI
- Many uses- banking/shopping etc.



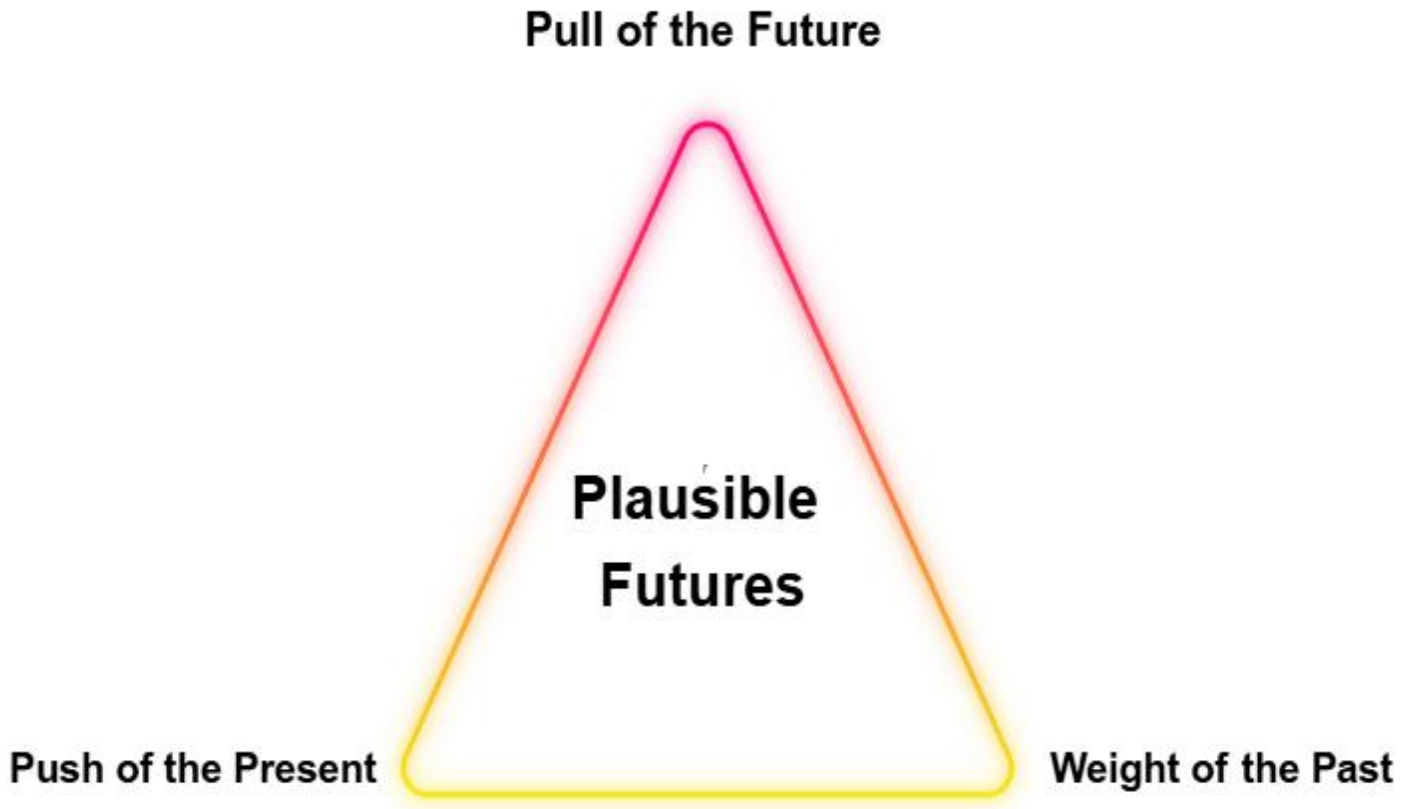
Weight of the Past

- Cost
- Privacy and data concerns
- Wellbeing issues

The Futures Triangle (adapted from Inayatullah, 2008)

Futures Triangle

Using the Futures Triangle resource, investigate the three forces shaping the future in relation to the issue you have been assigned.



The Futures Triangle (adapted from Inayatullah, 2008)

Futures Triangle

Groups

- Biodiversity loss
- Food insecurity
- Fast fashion
- Urban overpopulation

Futures Triangle Prompts

Start with:

1. **Pull of the Future:** What future do we as a group hope for in relation to the issue?
2. **Push of the Present:** What are the forces impacting change/pushing us towards the future?
3. **Weight of the Past:** What barriers affect change from happening?

Scenario Building

Using your work from the Futures Triangle activity, design 3 futures in relation to the Anthropocene issue previously assigned:

- Probable
- Possible
- Preferable

What does 2050 look like in each future?

Scenario Building Scaffolds

- **Probable future**- what future is likely to happen if things keep going the way they are?
- **Possible future**- what could happen? (even if it's a bit wild!)
- **Preferable future**- what future would you want to happen?

Backcasting

Look at the **preferable future** you designed as a group and identify what actions must happen to realise this future.

What decisions, skills, innovations, and/or policies must occur for this future to be realised?

Decision Time!

Which action is the most possible and has the most potential to bring about change in realising your preferred future?

Reflection

Can you identify links in the specification where these methodologies would support your students' engagement?

Oide

To refuse to participate in the shaping of our future is to give it up. Do not be misled into passivity either by false security (they don't mean me) or by despair (there's nothing we can do).
Each of us must find our work and do it.

Audre Lorde

Oide

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Supporting the Professional
Learning of School Leaders
and Teachers

Session 5

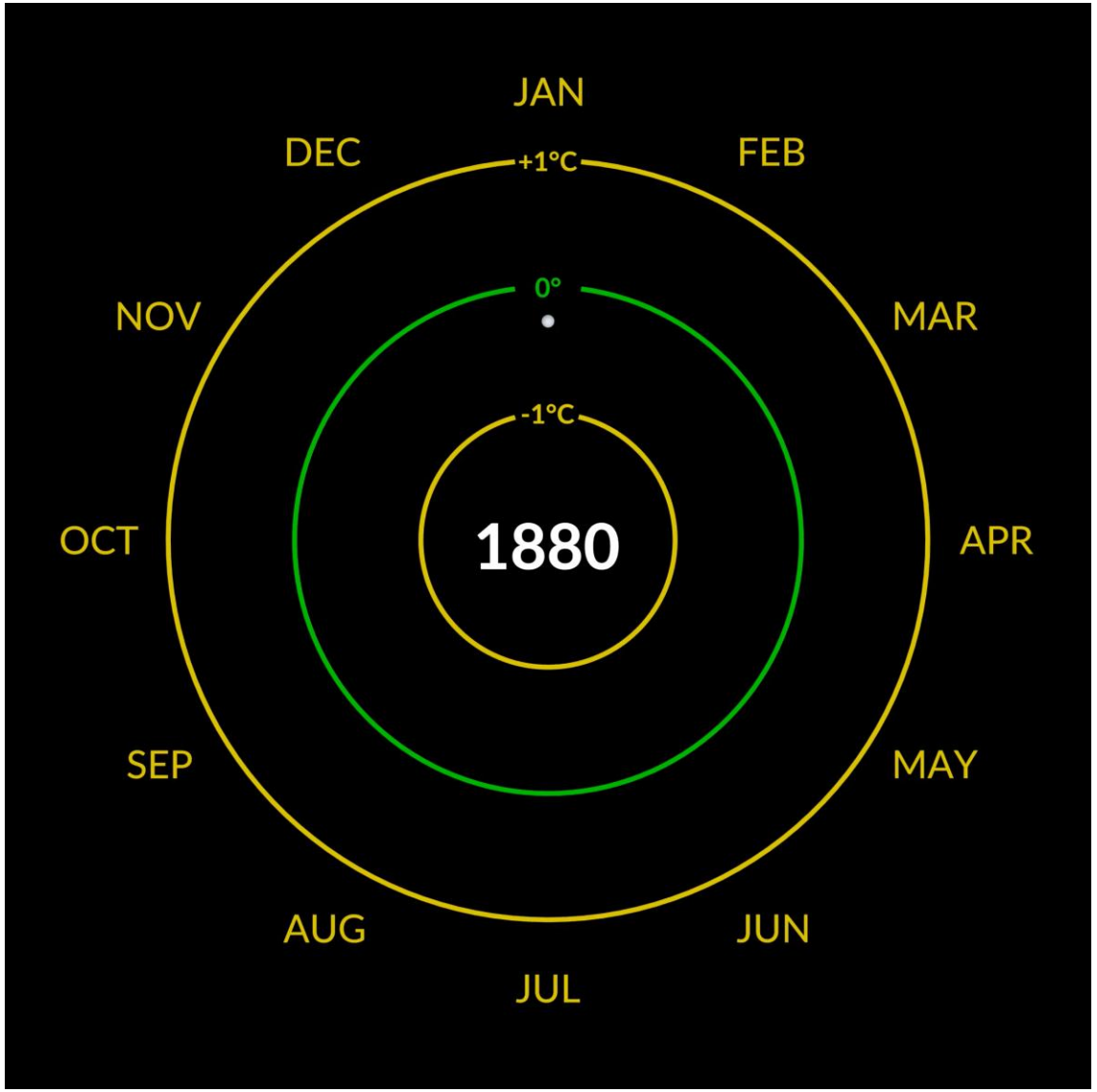
Learning Intentions Day 8

Discuss the Anthropocene through the SQ3R reading strategy and futures thinking methodologies

Investigate secondary data that demonstrates humans' role in global warming

Use effective questioning to support, guide, and model reflection for students

Global temperature change 1880-2025



Source: NASA's Scientific Visualization Studio

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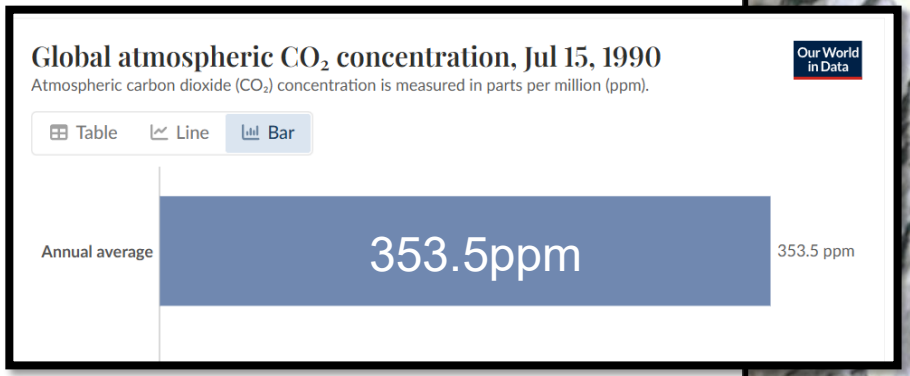
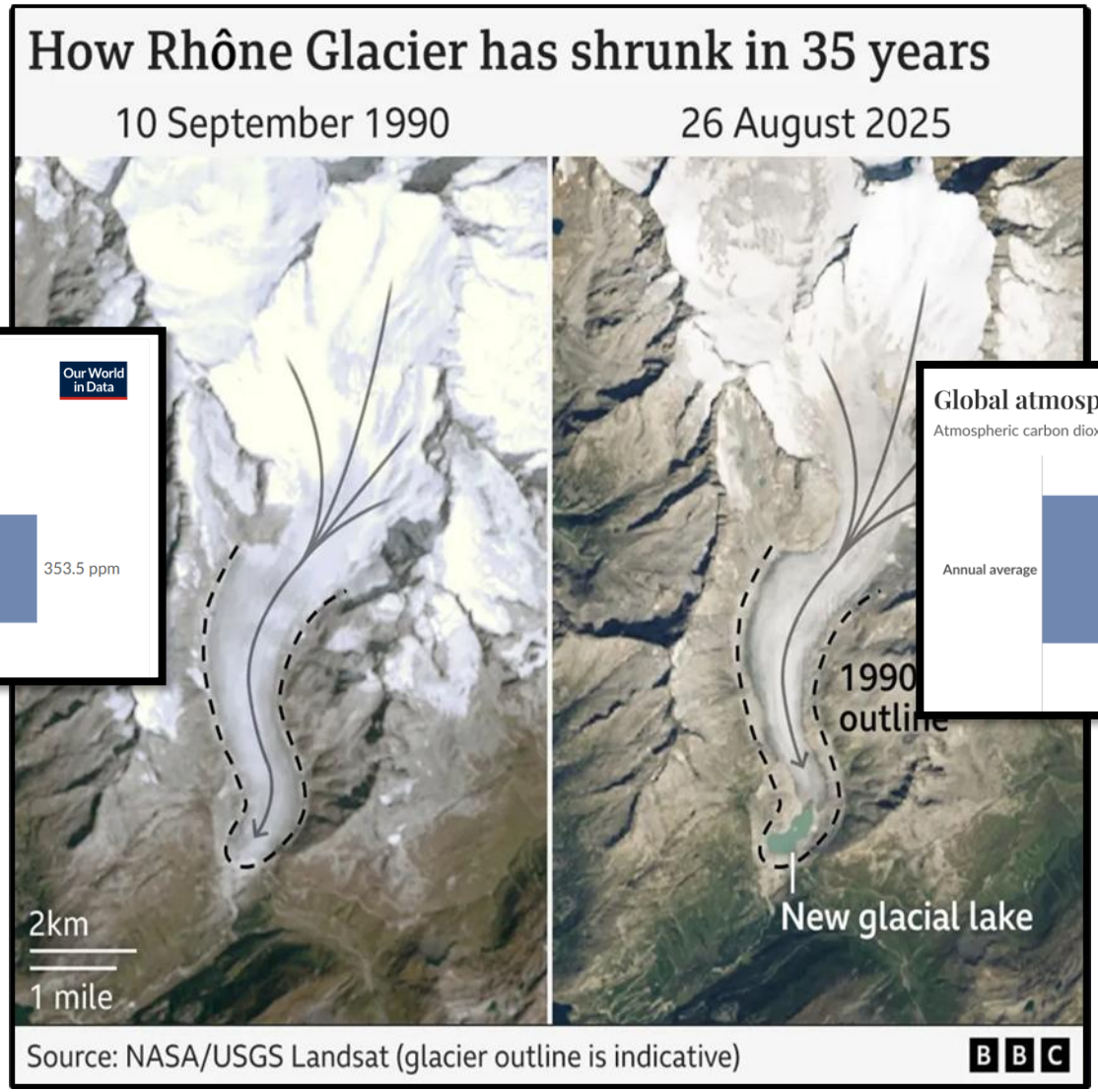
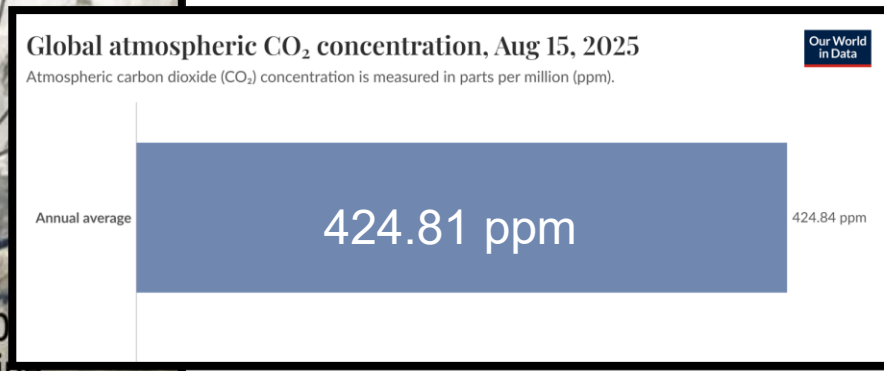

Global atmospheric CO_2 concentration, Jul 15, 1990
Atmospheric carbon dioxide (CO_2) concentration is measured in parts per million (ppm).
Our World in Data
Table
Line
Bar
Annual average
353.5ppm
353.5 ppm

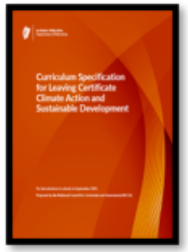

How Rhône Glacier has shrunk in 35 years
10 September 1990
26 August 2025
1990 outline
New glacial lake
2km
1 mile
Source: NASA/USGS Landsat (glacier outline is indicative)
BBC


Global atmospheric CO_2 concentration, Aug 15, 2025
Atmospheric carbon dioxide (CO_2) concentration is measured in parts per million (ppm).
Our World in Data
Annual average
424.81 ppm
424.84 ppm

Learning Outcome 1.7

Students learn about	Students should be able to

• secondary data including:
  • temperature change over time
  • precipitation levels
  • atmospheric greenhouse gas levels
  • rising sea levels
  • historical testimony
	7. demonstrate, using secondary data, the evidence for human-induced global warming



P. 14

Demonstrate	prove or make clear by reasoning or evidence, illustrating with examples or practical application

Where might you source secondary data to use with students?

Oide

Menti.com:

Climate Detectives

If Earth left clues as to the cause of global warming, where would you look?

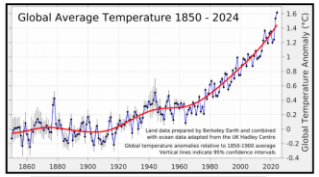
- temperature change over time
- precipitation levels
- atmospheric greenhouse gas levels
- rising sea levels
- historical testimony

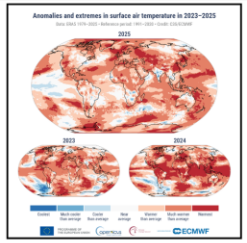
Temperature Change Over Time

Instructions:
- Investigate the secondary data
- Interpret the overall trend and support with evidence
- Explain how this suggests human-induced global warming
- Record the findings

Task:
1. Identify regions of rapid warming
2. Calculate the rate of increase before and after 1950
3. What might have influenced the trend in global temperatures?

Follow on:
•Find one other source of secondary data that is relevant and reliable
•Suggest a further question or task





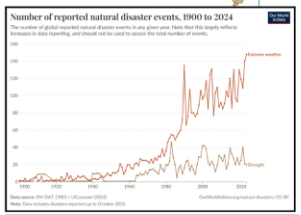
Source: https://berkeleyearth.org/global-temperature-report-for-2024/ Data source: ERA5. Credit: C3S/ECMWF. https://climate.copernicus.eu/GCH2025-graphics-gallery

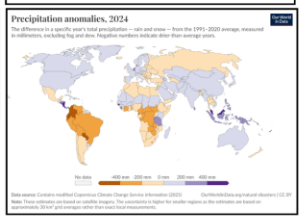
Precipitation Levels

Instructions:
- Investigate the secondary data
- Interpret the overall trend and support with evidence
- Explain how this suggests human-induced global warming
- Record the findings

Task:
1. Interpret how rainfall patterns have changed in different regions
2. Identify increases in extreme precipitation events
3. Explain the connection between a warmer atmosphere and more extreme rainfall

Follow on:
•Find one other source of secondary data that is relevant and reliable
•Suggest a further question or task





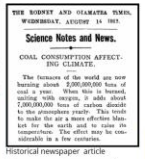
Sources: OFM-DAT, CRED / UCLouvain (2025) – with major processing by Our World in Data.
Contains modified Copernicus Climate Change Service information (2025) – with major processing by Our World in Data

Historical Testimony

Instructions:
- Consider the secondary data
- Interpret the overall trend and support with evidence
- Explain how this suggests human-induced global warming
- Record the findings

Task:
- List the changes that are mentioned in these testimonies
- Explain how testimony from communities reinforces scientific data
- Investigate if predictions made decades ago match actual outcomes

Follow on:
•Find one other source of secondary data that is relevant and reliable
•Suggest a further question or task


THE SYDNEY AND QUEANBEYAN TIMES, WEDNESDAY, AUGUST 14 1907.

Science Notes and News.

COAL CONSUMPTION AFFECTING CLIMATE.

The furnaces of the world are now burning about 2,000,000,000 tons of coal a year. When this is burned, uniting with oxygen, it adds about 7,000,000,000 tons of carbon dioxide to the atmosphere yearly. This tends to make the air a more effective blanket for the earth and to raise its temperature. The effect may be considerable in a few centuries.

Historical newspaper article


PHILOSOPHICAL MAGAZINE AND JOURNAL OF SCIENCE.


Thames frost fair 1825
James Stow, engraver; after Thomas Wyke, artist

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Whaling ships log books

Whalers kept detailed logs of their journeys. These records help reveal how rapidly climate change has affected parts of the ocean with little modern or historical climate data. For example, in 1871, several whaling ships reported approaching a wall of ice that towered above the ship. Contemporary whalers would likely never find themselves in such a predicament due to the rapid decline of Arctic ice.

Historical scientific paper linking rising greenhouse gas concentrations to increasing global average surface temperature.

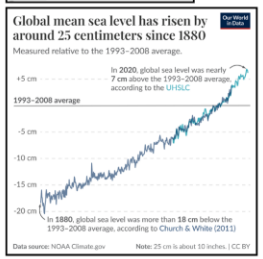
"We have a lake called Lake Chad which... when I was younger... was around 10,000 km². When I was growing up the lake was shrinking. Now the lake has lost about 90 % of its water, so... seeing with my own eyes... nature shrinking and seeing my community struggling..." When we used to milk during the dry season it was two times a day, morning and in the evening. Now it's only once every two days. The
— Hindou Oumarou Ibrahim, Indigenous climate activist.

Rising Sea Levels

Instructions:
- Consider the secondary data
- Interpret the overall trend and support with evidence
- Explain how this suggests human-induced global warming
- Record the findings

Task:
1. Does the graph suggest that sea level rise is constant or changing over time?
2. List 5 coastal locations at a high risk of flooding.
3. Describe two factors that could explain the sea-level rise

Follow on:
•Find one other source of secondary data that is relevant and reliable
•Suggest a further question or task



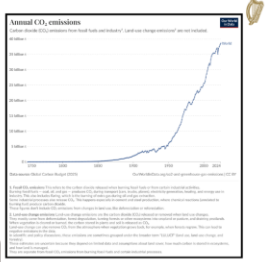
Source: https://www.openstreetmap.org/; https://www.coastalhazardwheel.org/; https://ourworldindata.org/data-insights/global-mean-sea-levels-have-increased-by-around-25-centimeters-since-1880

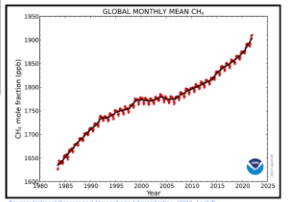
Atmospheric Greenhouse Gas Levels

Instructions:
- Consider the secondary data
- Interpret the overall trend and support with evidence
- Explain how this suggests human-induced global warming
- Record the findings

Task:
1. Investigate if the change in CO_2 correlates with the timeline of industrialisation
2. Estimate the increase in methane (CH_4) concentration between 1985 and 2024
3. Explain how increased greenhouse gases cause warming

Follow on:
•Find one other source of secondary data that is relevant and reliable
•Suggest a further question or task



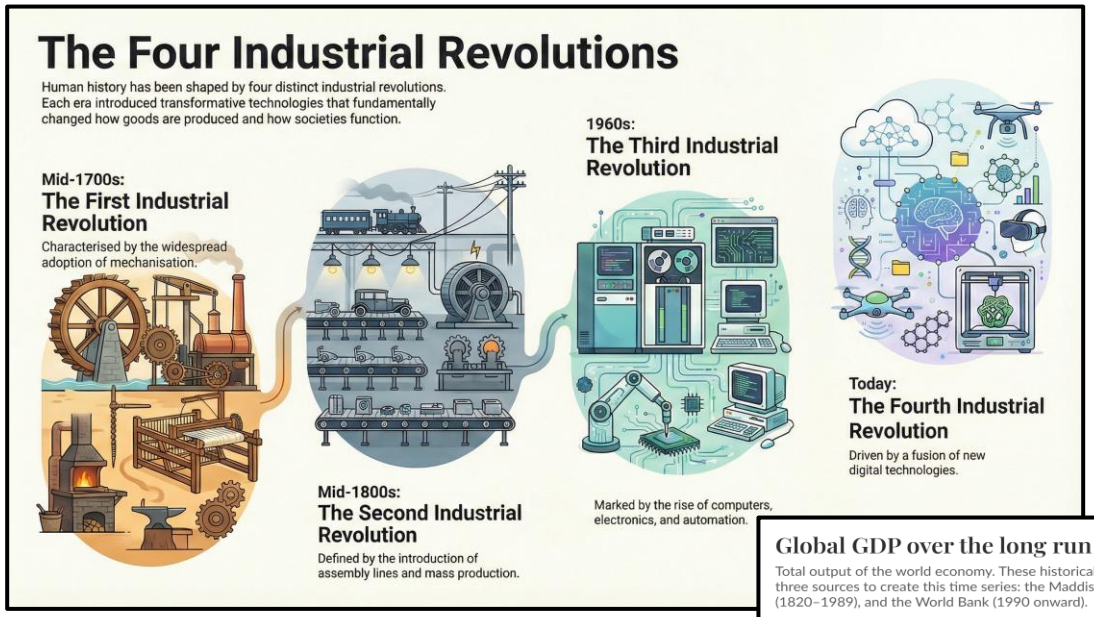


Source: National Oceanic and Atmospheric Administration, (2022, April 7). Increase in atmospheric methane set another record during 2021. https://www.noaa.gov/news-release/increase-in-atmospheric-methane-set-another-record-during-2021; https://ourworldindata.org/co2-emissions

Instructions:

- Explore and note **trends** seen in the data
- Complete the **tasks** provided
- Find one **other source** of secondary data that is relevant
- Suggest a **further question** or **task** for students to help them engage with this aspect of the learning outcome.

Industrialisation, GDP and Population



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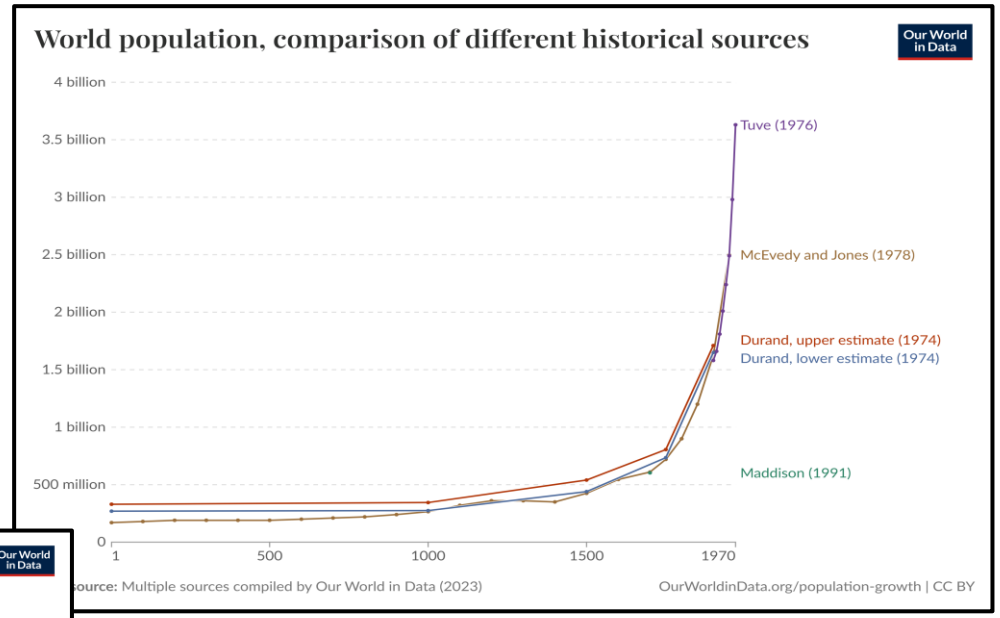

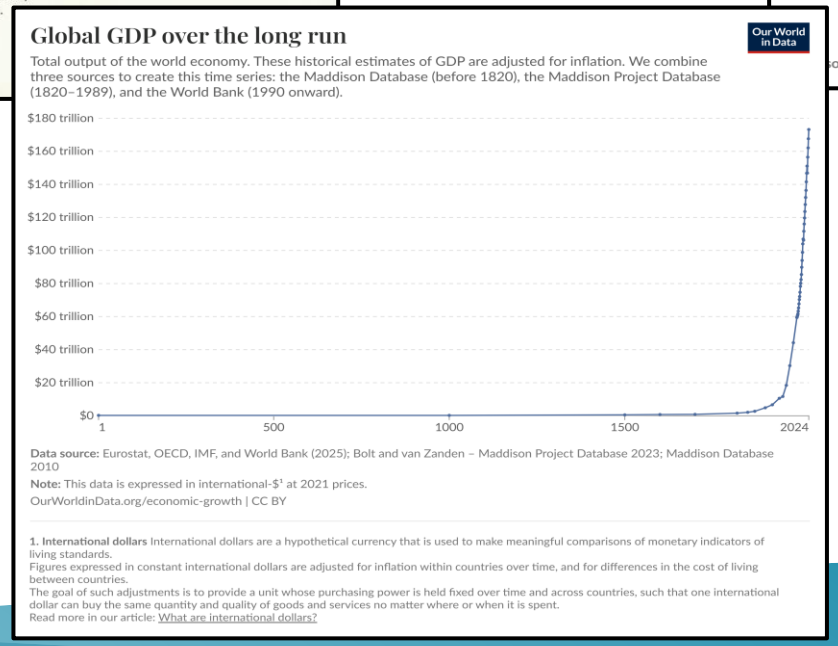

Compile the File of Evidence

How we know that humans have induced global warming

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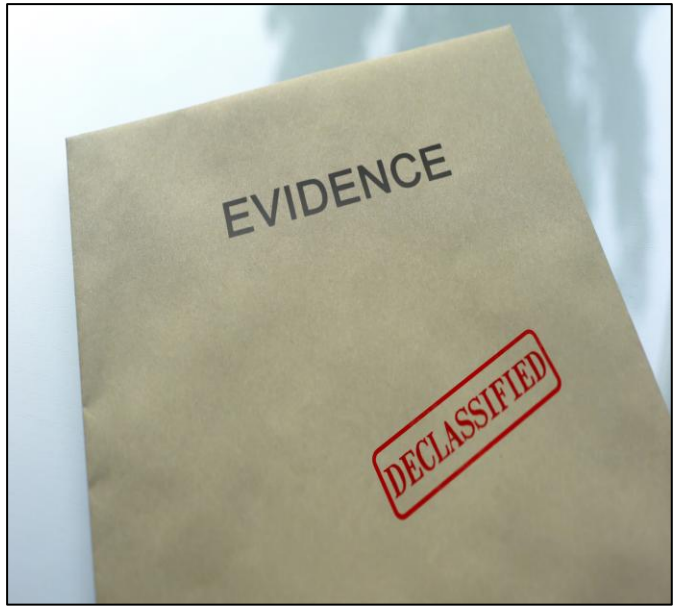
File of Evidence

Topic investigated	Evidence (trends/ explanations)	Two statistics that support the findings
Temperature change over time		
Precipitation levels		
Atmospheric greenhouse gas levels		
Rising sea levels		
Historical testimony		

How does the combined data demonstrate that global warming is human-induced?



Examine the Evidence

- Which piece of evidence provides the strongest proof that humans have induced global warming?
- How do multiple data sources strengthen the conclusion?
- Why can’t natural processes alone explain this increase in global warming?

Planning for Assessment

- Which key competencies would be developed during that learner experience?
- How would you assess learning outcome 1.7?
- Design an appropriate assessment with your partner.

Steps to Designing Effective Assessment in the CASD Classroom

- Start with: what needs to be achieved?

Align with the **Learning Outcome(s),** be guided by the **Action Verb.**

- Design tasks that are based on the values, the knowledge and the skills required
- Share success criteria with students
- Plan for **access** and to **challenge** to an appropriate level
- Consider how you will provide feedback.

Making links across the specification

L.O. ?

L.O. ?

1.7

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Ghairmiúil i measc Ceannairí
Scoile agus Múinteoirí

Supporting the Professional
Learning of School Leaders
and Teachers

Session 6

Learning Intentions Day 8

Discuss the Anthropocene through the SQ3R reading strategy and futures thinking methodologies

Investigate secondary data that demonstrates humans' role in global warming

Use effective questioning to support, guide, and model reflection for students

What are we looking for?

What does meaningful reflection look like in student work?

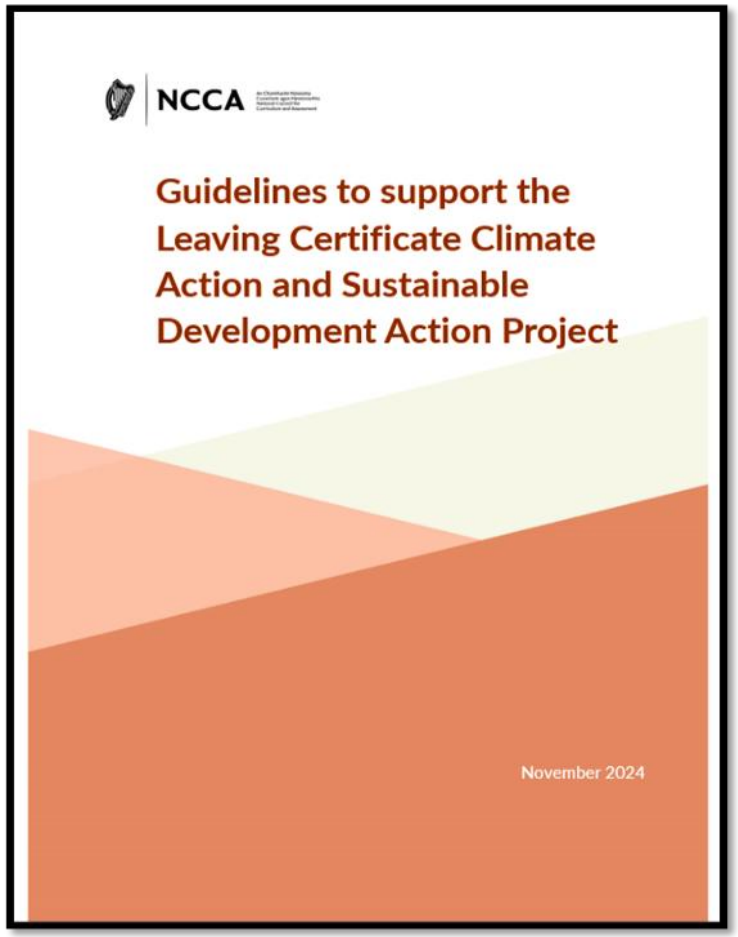
Reflection in CASD

The learning space

Students can be supported in realising the learning outcomes of this specification through appropriate classroom and place-based experiences where they have opportunities to:

- take informed action both as individuals and in small groups, maximising the development of competencies necessary for effective action
- experience a holistic approach which considers students' emotions, thinking, and life experiences
- engage in democratic citizenship, involving critical reflection, democratic participation and informed action

Planning for the Action Project in the CASD classroom



https://tinyurl.com/33vravfx

Mapping Reflection Through the Eight Stages of the Action Project

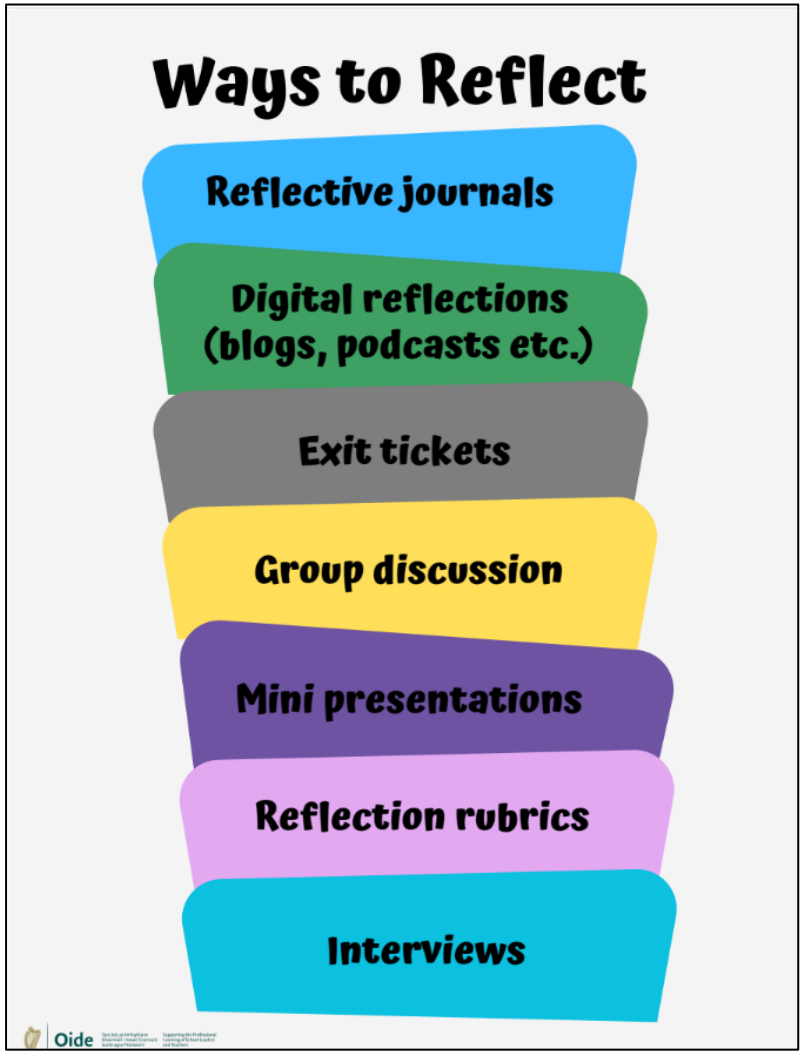
Read through the group's assigned stages and identify where students will need to reflect when completing their Action Project.

Demonstration of Student Reflection

List a variety of ways in which students could demonstrate their reflections.

Ways to reflect

- Reflective journals
- Learning logs
- Exit tickets
- Group discussion
- Digital reflections (blogs, podcasts etc.)
- Reflection rubrics
- Mini presentations
- Mini interviews



Reflection Throughout the Specification

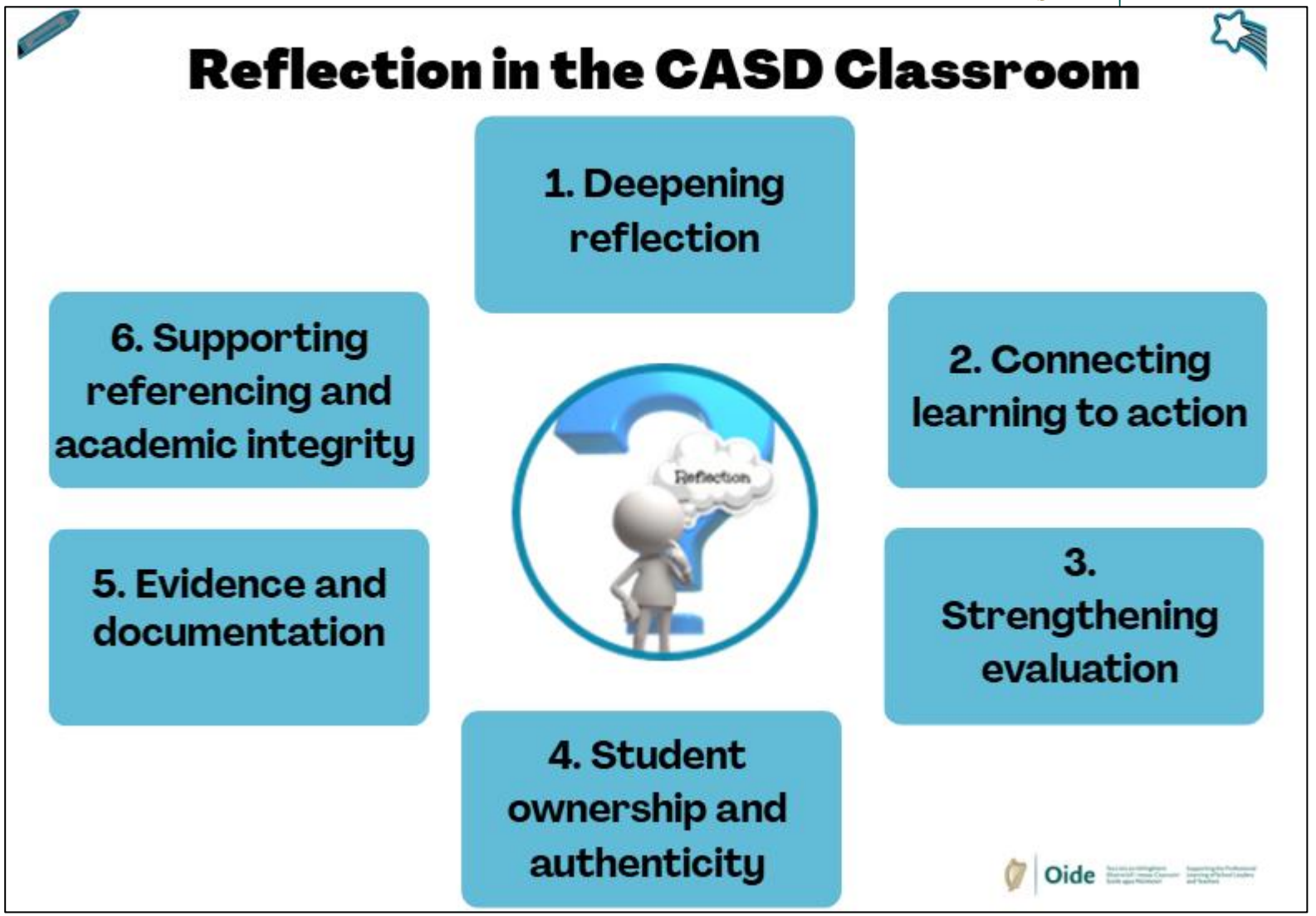
In groups, participants will:

Share examples of what meaningful reflection might look like for each assigned LO.

Group 1: Strand 1; LO 1.12
Group 2: Strand 2; LO 2.2
Group 3: Strand 3; LO 3.5
Group 4: Strand 4; ALT 4.2

Designing Reflection Prompt Questions

Develop 2-3 prompt questions for your assigned aspect of reflection.



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Evidence and documentation

Do you have a photo, screenshot, or note to support this work?

What evidence shows that you carried out this action?

Can you link your reflection to something you recorded earlier?

Oide

Supporting referencing and academic integrity

Where did this information come from?

Can you note the source so you can reference it later?"

How would you put this in your own words?

Do you have the author/title/year for this?

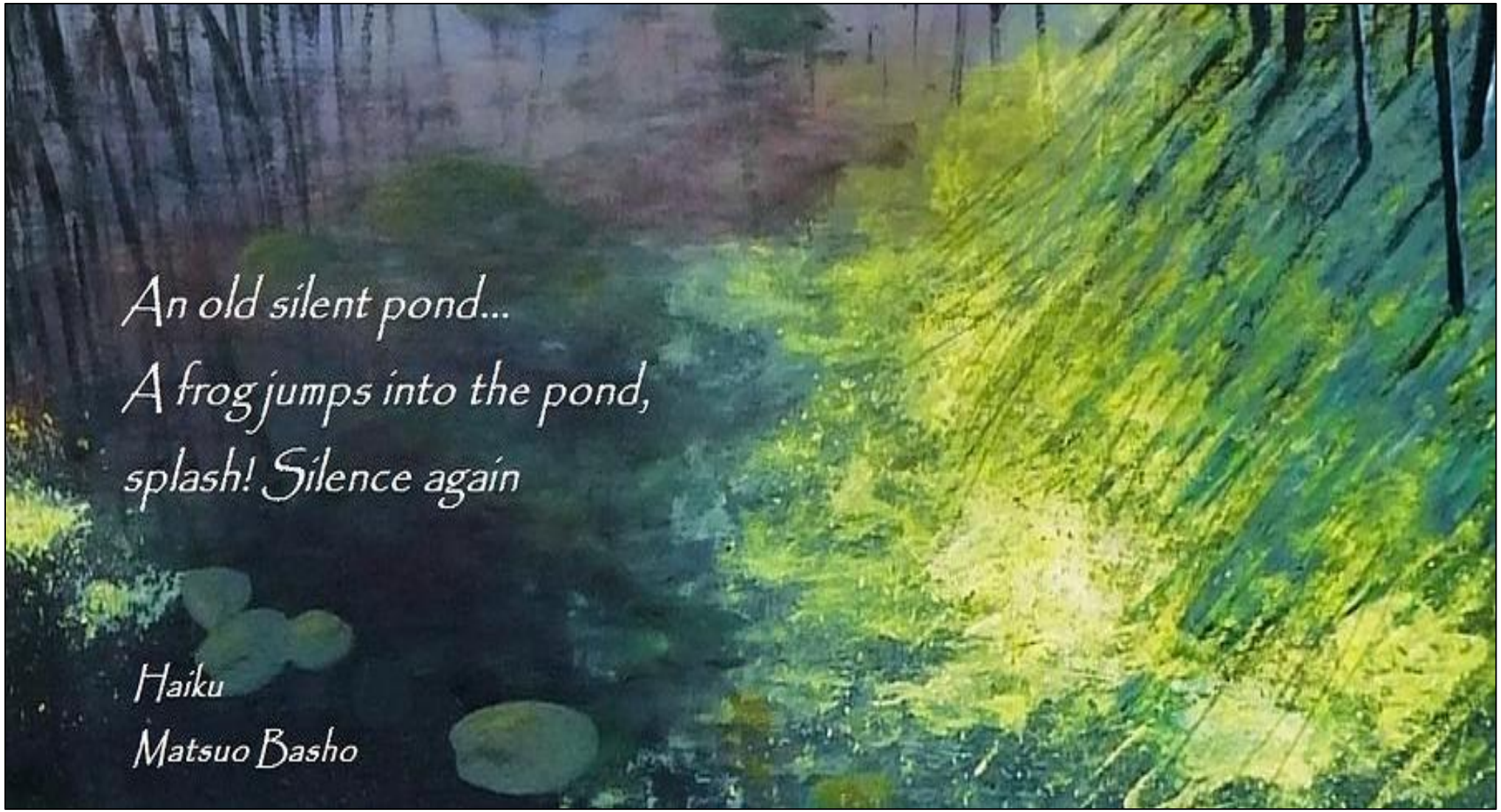
Is there a direct quote here? If so, can you mark it clearly?

Oide

Using Prompt Questions to Encourage Reflection

Reflection

List one action that you plan on immediately implementing in your classroom practice following this two-day PLE and two actions within the next month.


An old silent pond...
A frog jumps into the pond,
splash! Silence again
Haiku
Matsuo Basho

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