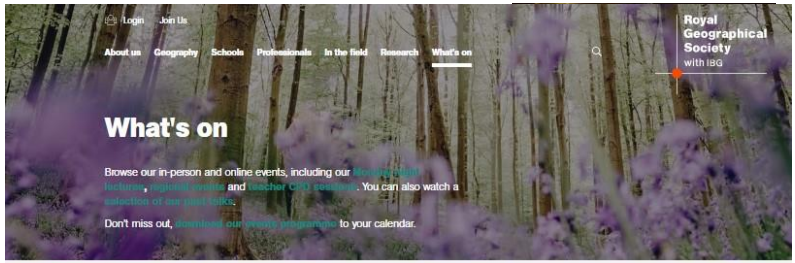
GI PEDAGOGY



Geographer - introductory webinar

[Online] Join this webinar to learn more about the benefits of becoming Chartered.

21 September 2022

WORKSHOPS, PROFESSIONAL CPD, ONLINE

Online secondary geography teachmeet

[Online] In this online session, we will be asking geography teachers to share their ideas and innovations with the teacher community.

21 September 2022

FIND AN EVENT

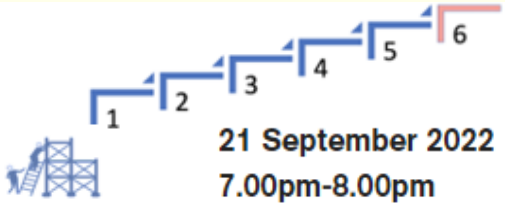
Keyword Search

Enter keyword or phrase...

Location
East of England (5)
London (49)
Midlands (3)
Northern Ireland (3)
North West (5)
South (6)
South West (5)
Wales (3)
Yorkshire and the North East (5)

Event type
Online (90)
In-person (74)
Collections events (8)
Conferences (1)
Discussions and interviews (6)
Everest (8)
Exhibitions (7)
Expedition and fieldwork festival (8)
Field visits (1)
In the field CPD (8)
Lectures (43)
Monday night lectures (13)
Monday night supper (7)
Networking events (12)

‘GI-Pedagogy’ Innovative Pedagogies for Teaching with GIS



Co-funded by the Erasmus+ Programme of the European Union

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eurogeo

KING'S ELY

St Mary's University Twickenham London

UNED

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Innovative Pedagogies for Teaching with GIS

Contents

- About the project
- Innovative **Pedagogical model** for **Teaching with GIS**
- **Toolkit** of innovative pedagogical approaches
- Teacher training **course**
- Case studies and a digital exhibition of the findings




Creating Vignettes / case studies

Gi Pedagogy:
Concept Cube

Co-funded by the Erasmus+ Programme of the European Union

S in GIS stands for **system.**

S in our model can also stand for **steps** of course and also **scaffolding.**

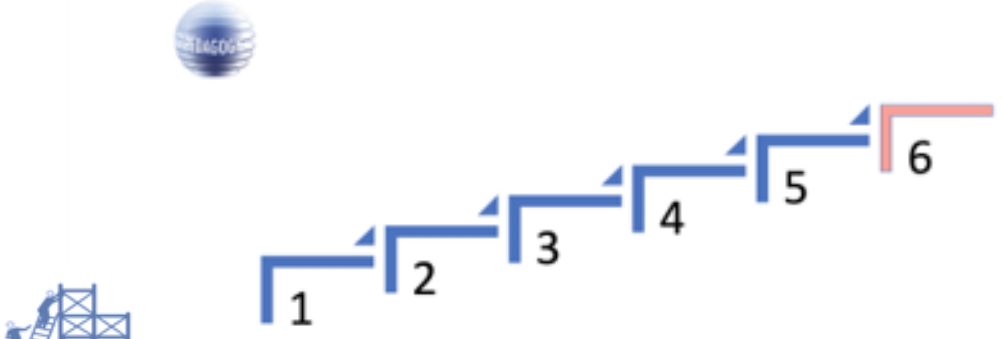
S can also stand for **schema / schemata**: the interconnected blocks of knowledge which are acquired at each level.

S is also about **solutions** to problems which GIS can help to produce.

And finally, the S can stand for the **stories** which are told using GIS: the narratives developed by teachers and learners.

Also S = **sustainability**

Our final thinking can be represented by this diagram:



2019-1-UK01-KA203-061576

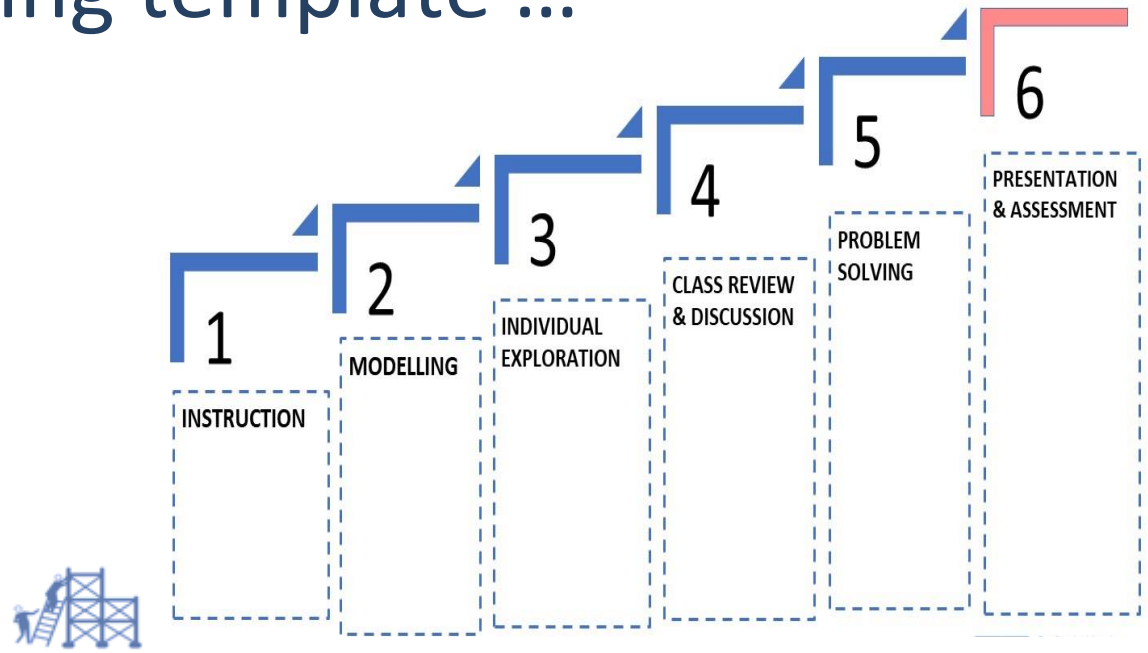
You will notice the ◢ between each step - these represent opportunities for **checking understanding** before moving up, and also the opportunity to slide back down if required. Steps may also be missed out by groups who may have already acquired schema, but may also be visited several times during a lesson sequence.

Creating template …

Rosenshine's Principles (dual coding icons) for teachers' use

Principle	Description	Icon
1	**Rosenshine 1 – (Daily) review** Start each lesson with a repetition of previous material. Regular repetition reinforces what was learned and leads to more spontaneous recall.	
2	**Rosenshine 2 - New materials in small steps** Present learning materials in small amounts. Accompany students with practice after each step.	
3	**Rosenshine 3 - Ask questions (onderwijsleergesprek)** They connect the new learning material with previous knowledge and practise it.	
4	**Rosenshine 4 - Provide models** Pupils can focus on the steps to solve a problem	
5	**Rosenshine 5 - Guide student practice** The best teachers spend a lot of time supervising the practice/learning of new material.	
6	**Rosenshine 6 - Check student understanding (onderwijsleergesprek)** By checking in between, pupils can learn the material with fewer mistakes	
7	**Rosenshine 7 - Obtain high success rate** Aim for the students to experience approximately 80% success in the exercises, questioning …	
8	**Rosenshine 8 - Scaffolds for difficult tasks** The teacher provides temporary support that decreases as students become more competent.	
9	**Rosenshine 9 - Independent practice** Provide practice time in and out of the classroom so that the learned material can be automated.	
10	**Rosenshine 10 – (Weekly and monthly) review** Pupils need to practise intensively in order to automate the material. Not necessary for this key study.	

Icons based on Rosenshine poster by Oliver Caviglioli



Step 1: Direct instruction / teacher facilitated stage

Step 2: Modelling / Scaffolding,

Step 3: Individual exploration

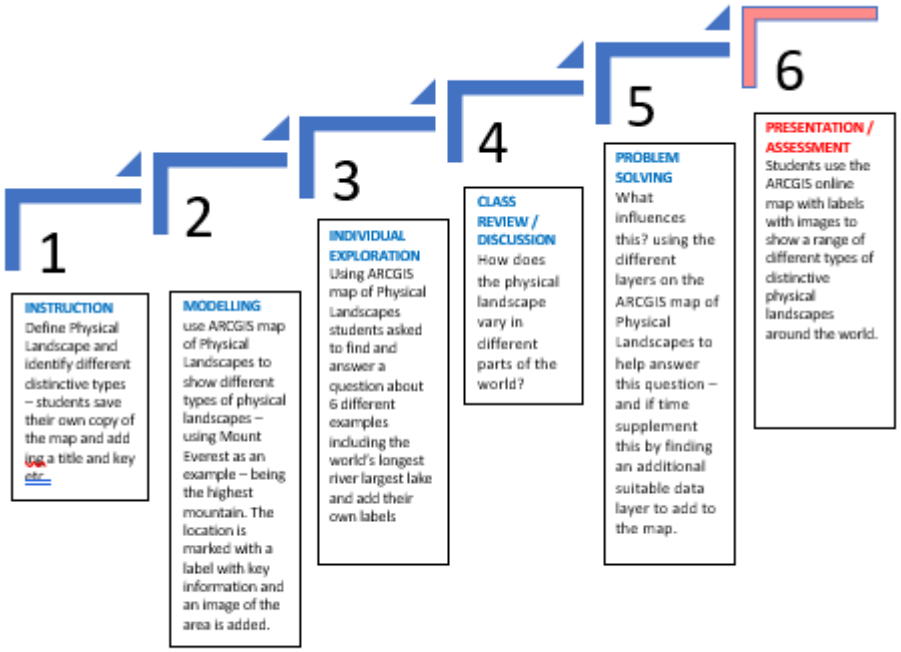
Step 4: Review - discussion

Step 5: Problem-solving

Step 6: Presentation/Assessment

Example 1

- Physical landscapes
- Age group 11-14 years

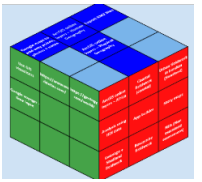


VIGNETTE Physical Landscapes

Step	*Identify a topic / story that is going to be told / explored using GIS*	Other
	Teaching WITH GIS	
	How does the physical landscape vary in different parts of the world?	
	What influences this?	
	Curriculum context: Secondary Geography – Introduction to the Physical Environment	
	Target age group: 11 – 13yrs, 14-15yrs.	
LOs	*Learning objectives*	
	• Retrieve prior learning about different types of physical environment that exist • Describe the location of specific examples of landscapes and explain links between them • Describe, explain and evaluate possible influences on this location and distribution. Link to SDGs.	

Gi Pedagogy: Concept Cube

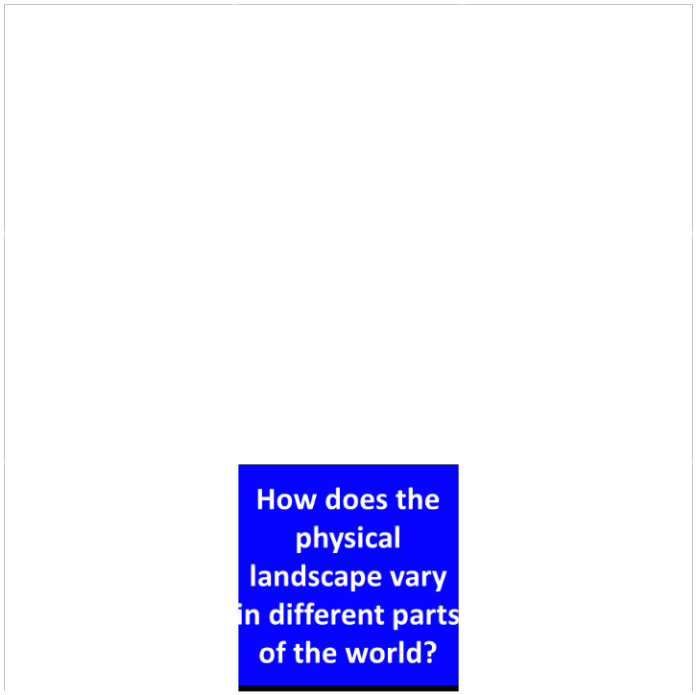
Title:	Working memory: Current learning schema
Write key concept here:	How does the physical landscape vary in different parts of the world?
1	Great Mountain ranges
2	Coastal landscapes
3	River landscapes
4	Lakes and Oceans



	Long-term memory: Prior learning schema
1	Location and names of continents
2	World oceans
3	Equator
4	Latitude and longitude
5	Different land uses
6	Ecosystems and biomes
7	Tropical Rainforest
8	Hot deserts
9	Cold environments

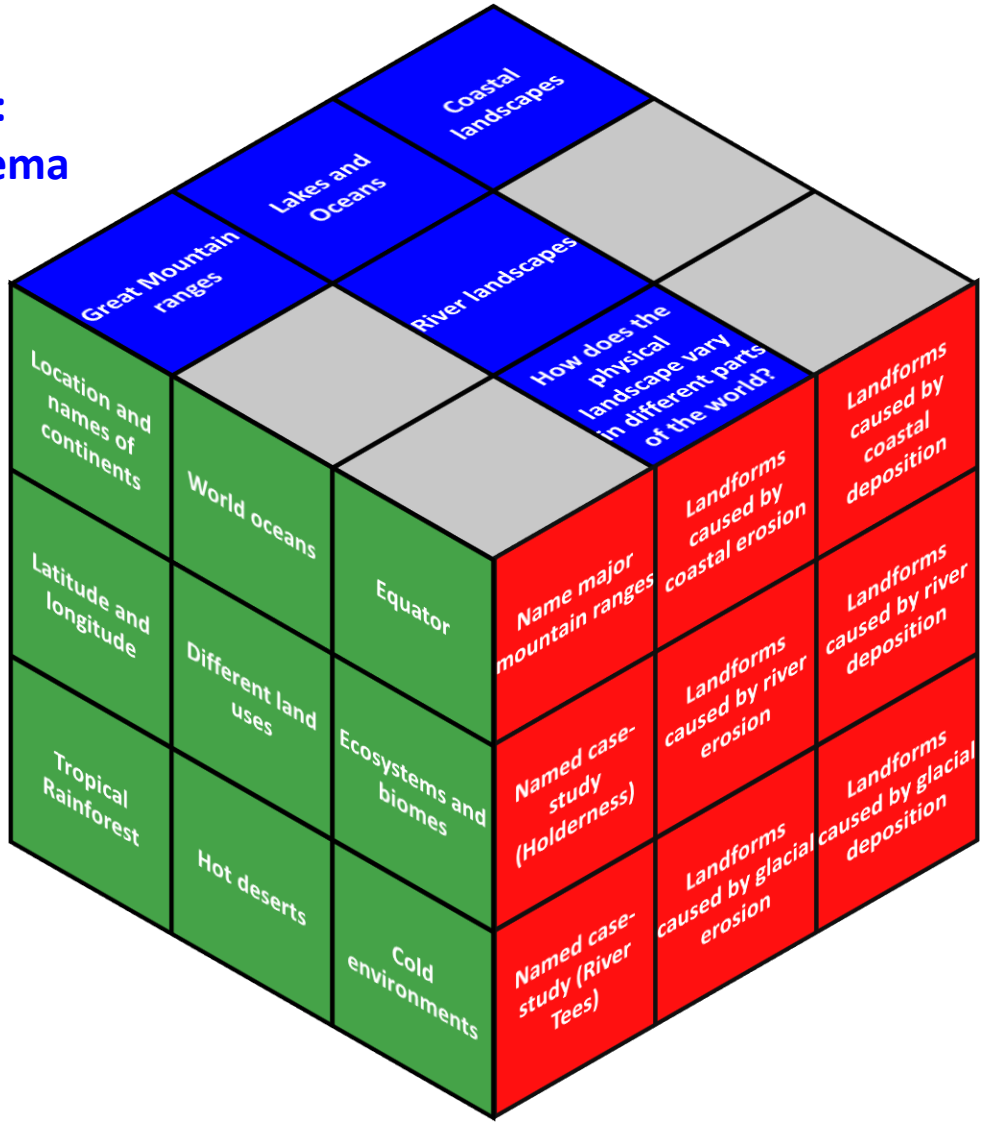
	Long-term memory: Future learning schema
1	Name major mountain ranges
2	Landforms caused by coastal erosion
3	Landforms caused by coastal deposition
4	Named case-study (Holderness)
5	Landforms caused by river erosion
6	Landforms caused by river deposition
7	Named case-study (River Tees)
8	Landforms caused by glacial erosion
9	Landforms caused by glacial deposition

Working memory:
Current learning schema



Working memory:
Current learning schema

Long-term memory:
Prior learning schema



Long-term memory:
Future learning schema

Esri, USGS | Esri, FAO, NOAA

Home Physical Landscapes of the world

Open in new Map Viewer New Map Create Presentation

Details Add Basemap Analysis Save Share Print Directions Measure Bookmarks Find address or place

About Content Legend

Contents

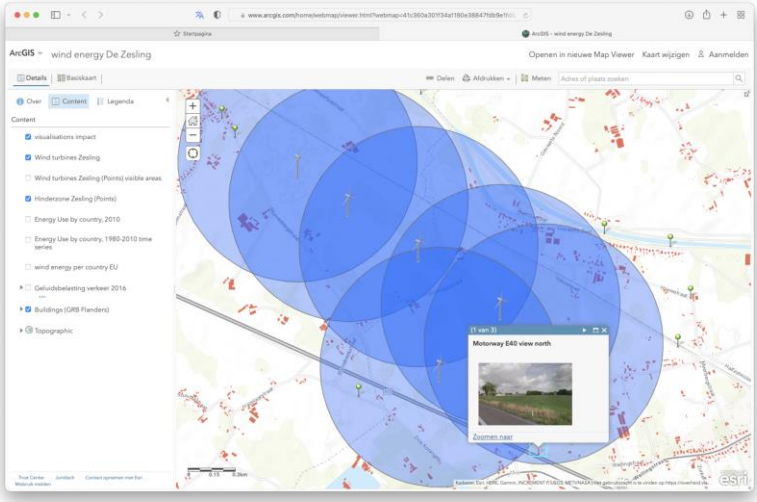
- [ ] World Mountain Ranges
- [x] Rivers World Natural Earth
- [x] World Major Rivers
- [ ] World Cities
- [ ] Human Development Index (2019)
- [ ] World Biomes - Elementary
- [ ] World Imagery (Wayback 2014-02-20)
- [x] Esri 2020 Land Cover

No Data
Water
Trees
Grass
Flooded Vegetation
Crops
Scrub/Shrub
Built Area

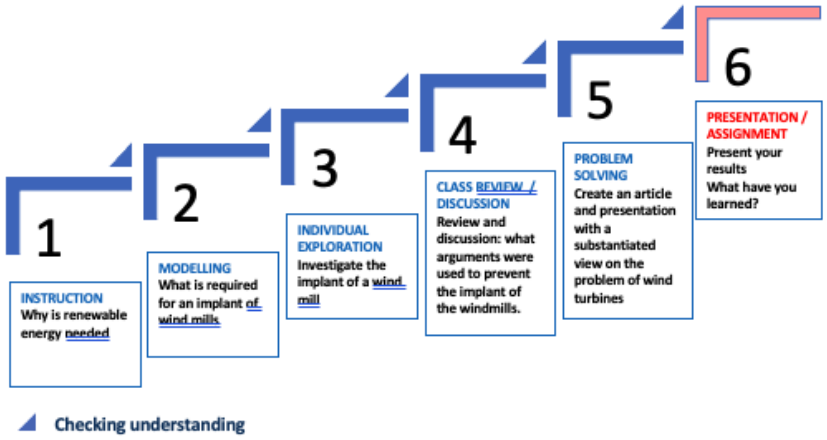
Arctic Ocean
North Pacific Ocean
North Atlantic Ocean
South Pacific Ocean
South Atlantic Ocean
Indian Ocean
Southern Ocean

Example 2

- **Windmills**
- **Age group 17-18 years**



demo



VIGNETTE - WIND ENERGY

Step	*Identify a topic / story that is going to be told / explored using GIS*	Other
	Teaching with GIS	
	Wind energy	
	Context / place in SoW: Sustainable development, energy transition (in K11-12 compulsory education topic)	
	Target age group: K11-12 = 17-18 y	*100 min*
LOs	***Learning objectives***	
	• Define alternative energy • Describe evaluate the possible impact of wind mills • Understand the nimby-syndrome • Interpreting maps • Explain • Describe, explain and evaluate possible influences on this location and distribution. Link to SDGs. SUSTAINABLE DEVELOPMENT GOALS · 7 AFFORDABLE AND CLEAN ENERGY · 12 RESPONSIBLE CONSUMPTION AND PRODUCTION · 13 CLIMATE ACTION	
Res	**Key resources and embedded hyperlinks if appropriate**	
	ArcGIS online map https://arcg.is/1zqLrX0 **other websites:** https://ourworldindata.org/renewable-energy https://globalwindatlas.info	

What next?

An online course for Teachers...

- *Introduction to what geoinformation (GIS) is and why it should be used*
- *Innovative pedagogy and theoretical basis*
- *Sequencing and integrating geoinformation (GIS) into the curriculum*
- *Case-study examples of what good looks like*
- *Conclusion: 'I - we – you' section on creating and sharing ideas.*

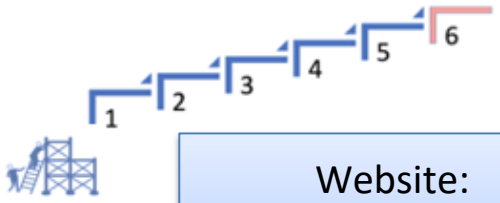
Multiplier Teacher Training event

FREE EVENT

St Mary's University → Thurs 17th Nov 22

sophie.wilson@stmarys.ac.uk

Any questions?



Website:
www.gi-pedagogy.eu

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