

Principle	Description	lcon
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.	(C)
2	Rosenshine 2 - New materials in small steps Present learning materials in small amounts. Accompany students with practice after each step.	
3	<b>Rosenshine 3 - Ask questions (onderwijsleergesprek)</b> 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.	<b>(</b>
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.	¥·ħ·┃·¥
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 - this is where schema building begins. Present new material.

Step 2: Modelling / Scaffolding, with review and questioning - what data are needed?

Step 3: Individual exploration

Step 4: Review - discussion

Step 5: Problem-solving

Step 6: Presentation/Assessment (Peer assessment possible too) and sharing of outcomes. This will also be the stage where students may feel secure enough to start their own exploration.

= checking understanding













## CASE STUDY <HOT DESERTS>

Step	Identify a topic / story that is going to be told / explored using GIS	Oth	ner
	Hot Deserts		
	Zooming into data		
	Curriculum context:		
	Target age group: 14-17 y.o.		
LOs	Learning objectives		
	[Ideas for Learning objective statements] • Retrieve prior learning about ecosystems • Describe and explain links between geolocation and types of climate • Describe, explain and evaluate Can link to SDGs especially: (Choose only those related to the vignette topic an 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 ACTION 15 UFF ON LAND CONSUMPTION CONSUM	d activities)	
Res	Key resources and embedded hyperlinks if appropriate		
	e.g. GIS resource; .pptx .csv .doc; video or audio clips [Thumbna	ils, if available e.g. for GIS resource(s)]	
	Individual exploration: [RESOURCES for students e.gpptx .csv .doc; video or audio clips]		

	Learning phases (may be one lesson or a sequence of lessons)	Timing
0	Step 0: Retrieval (e.g. quiz to check prior learning)	min
	Review         Retrieval of prior learning about         Could be a 'Do Now' task or quiz.         To review small-scale ecosystems. <u>Prior learning check:</u> What do they know about deserts? Names of main deserts? Have they ever been to or seen a video on deserts? What struck them most? What kind of animals and plants live there? How do people live in deserts?	
	Hot deserts are a global ecosystem (biome): desert	
<u>_</u>	<b>Check student understanding /</b> misconceptions about Are schema in place?	
1	Step 1: Direct instruction / teacher facilitated - schema building begins	min
<b>V</b>	New material in small steps Key question(s) and/or concept(s): Hot deserts – Lesson 1 (y9) • Where are they? (location knowledge) • What is the climate? • Why are they there? (global atmospheric circulation)	





























	Ask questions (klasleergesprek): Are schema in place?	
n	<ul> <li>Invite student suggestions (e.g. think-pair-share).</li> </ul>	
-	Input in small steps using GIS layers to <b>continue to build the narrative</b> .	
<b>N</b>	• Step	
	• Step	
2	Step 2: Modelling / Scaffolding Review and Questioning – what data are needed?	min
= -	Modelling	
	Modelling of individual exploration task (see <b>Step 3</b> ) [RESOURCES providing models for students e.gpptx .csv .doc; video or audio clips]	
	Scaffolding	
	e.g. guidelines; teacher support; peer support [RESOURCES providing models for students e.gpptx .csv .doc; video or audio clips]	
	Obtain high success rate	
<u>MII</u> ,		
3	Step 3: Individual exploration	min
(Tex	Guide student practice	
<u>Ful</u> *	Obtain high success rate	
	Instructions in ppt; Teacher and peer support [RESOURCES so to support students e.gpptx .csv .doc; video or audio clips]	
4	Step 4: Review - discussion	min
	Check student understanding (onderwijsleergesprek): Are schema in place?	
	<ul> <li>Review of Step 3: Individual exploration</li> <li>Feedback from students about their findings. Corrections discussed.</li> </ul>	
5	Step 5: Problem-solving	min
¥. H. J. F	Independent practice Deliberate practice	
	Anomalies resource prompt discussion: Q+A to check and deepen student understanding	
6	Step 6: Presentation/Assessment (incl peer assessment) sharing of outcomes.	min
	Check student understanding (onderwijsleergesprek): Are schema in place?	
	<ul> <li>Key question(s) to check student understanding</li> <li>Invite student suggestions (e.g. think-pair-share).</li> </ul>	
	Review of Step B3: Individual exploration	
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<ul> <li>[EXAMPLES</li> <li>Feedback from students about their findings. Corrections discussed.</li> <li>Students present findings</li> <li>Teacher and peer evaluation]</li> </ul>	
Link to next steps in learning	







# Write definitions for these terms (add files if needed) (ANSWERS) Would be added the main concepts used on the vignette

Key term	Definition
,	Suggestions for creating / research on a concept: You can do it! Where would you look for a definition? (you should consult more than one source) How would you define it? Consult several sources and define yourself in a maximum of 5-6 lines, knowing that the definition serves to clearly delimit the thematic, temporal and territorial scope of a concept. And enrich it, if appropriate, with the why, how, relations with other elements, behavioural patterns One or two examples and a significant image, graph or map should be added. Always without the
	defined word being part of the definition.

Concepts Cube to add: (see the ppt also and change these information with the cube after creating it)

### 1.Blue table - Working memory: Current learning schema

Write up to five key ideas for the lesson. As well as the main concept, add three or four other key ideas that will build towards the main concept. If you are NOT using a 4<sup>th</sup> additional concept then leave the row that starts with '4' blank.

#### 2. Green table - Long-term memory: Prior learning schema

Add up to nine items from prior learning that should already be part of the schema in students' long-term memory.

### 3.Red table - Long-term memory: Future learning schema

Add up to nine items that will be taught in future learning that will become part of the schema in students' long-term memory.











