Ufficio Scolastico Regionale per la Liguria
Direzione Generale

CLIL: l'uso veicolare delle lingue straniere nell'insegnamento di discipline non linguistiche

Genova, 30 novembre 2010

Integrare contenuto disciplinare e lingua in C.L.I.L. (dalla programmazione alla valutazione)

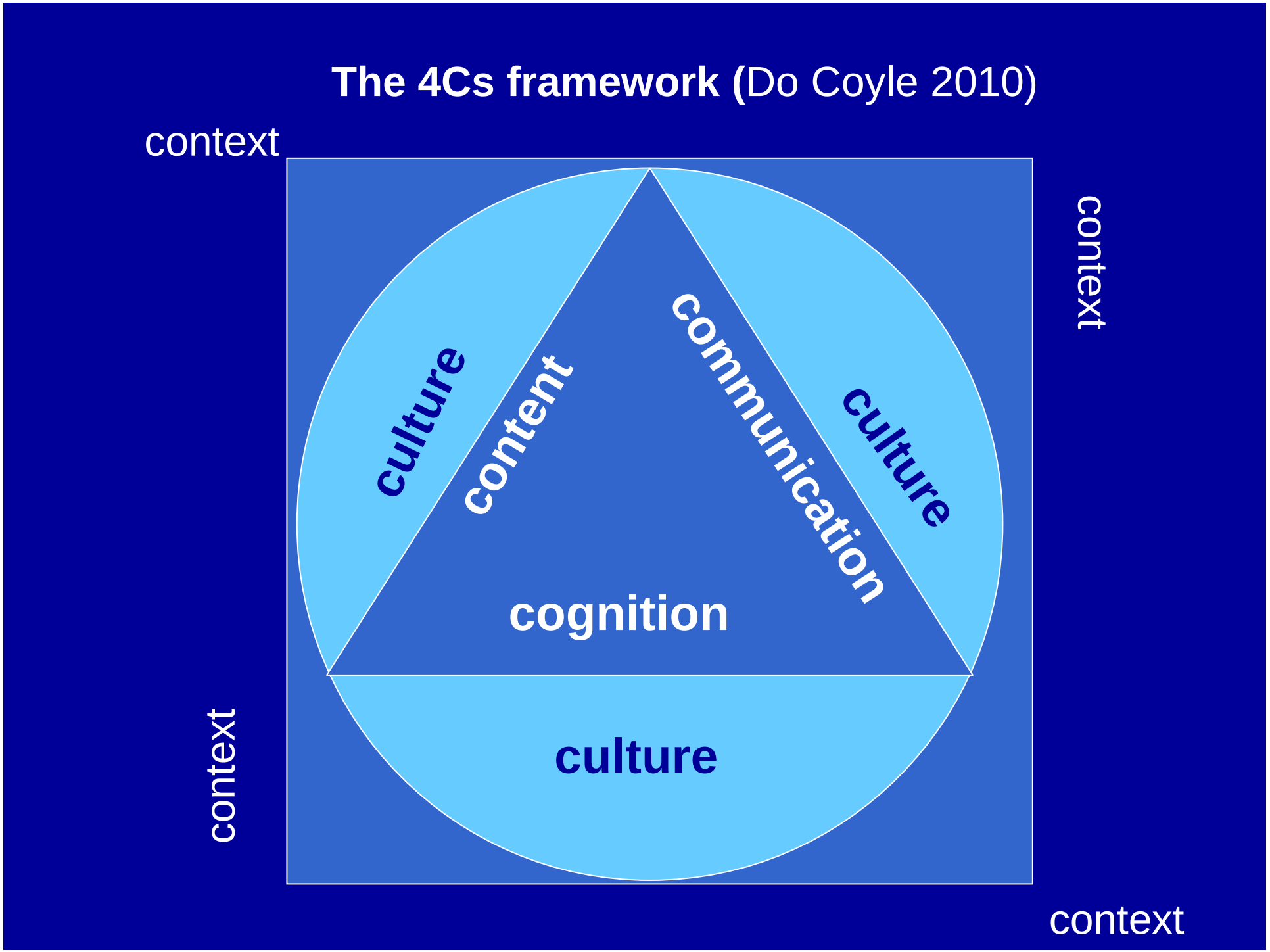
Teresina Barbero

CLIL – Content and Language Integrated Learning

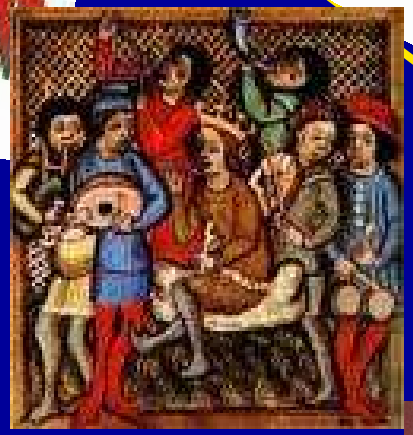
Quante fra queste parole sono essenziali al CLIL?

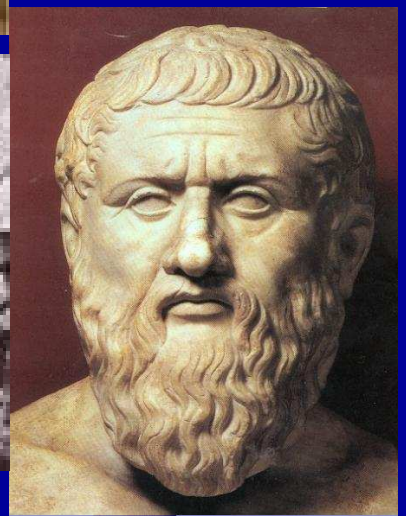
1. Due
2. Quattro
3. Tutte
4. Tre

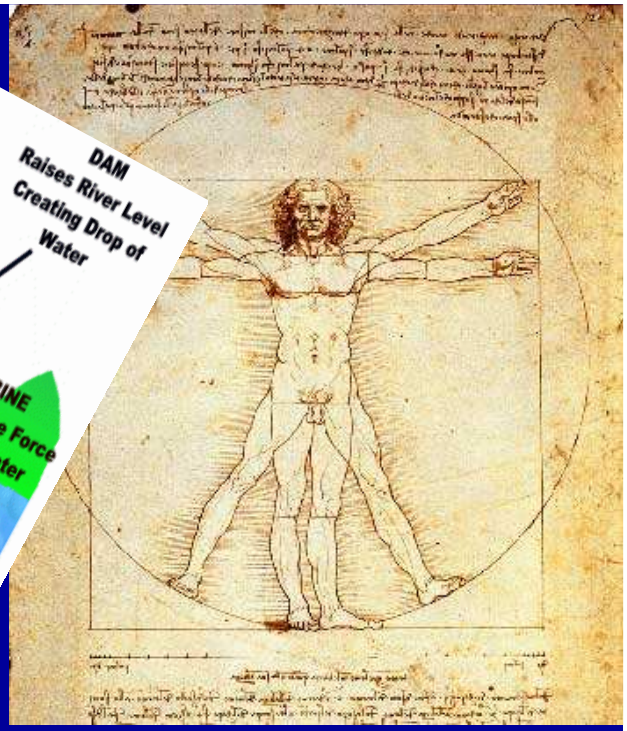
Content	Scaffolding	Strategies
Learning	Language	Integration
assessment	Task	CALP
Context	Thinking Skills	


The 4Cs framework (Do Coyle 2010)
context
context
context
context
culture
content
communication
culture
cognition
culture

CONTENT

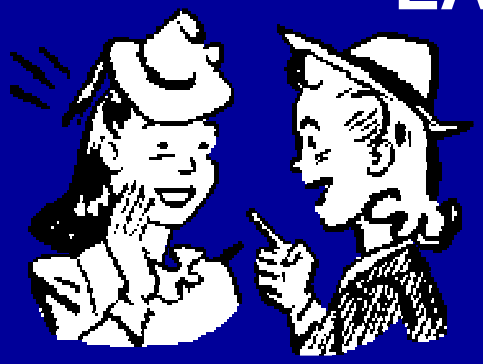


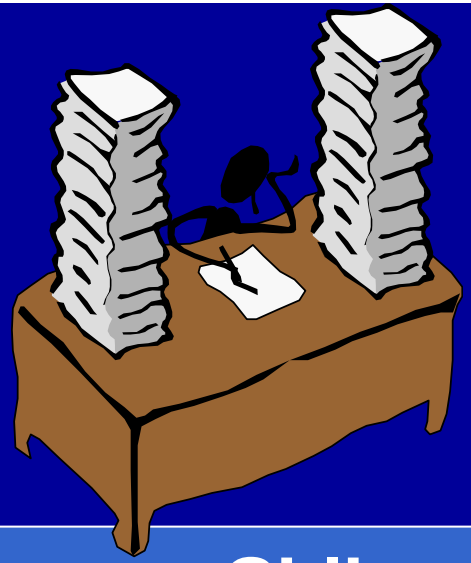




$$x^2 + y^2 - 4x - 2y - 3 = 0$$

LANGUAGE





+ COGNITION −

CEFR

learning the language to communicate

CLIL

learning contents and learning the language through the contents

Relational dimension
BICS
Basic Interpersonal communicative Skills

Cognitive dimension
CALP
Cognitive Academic Language Proficiency

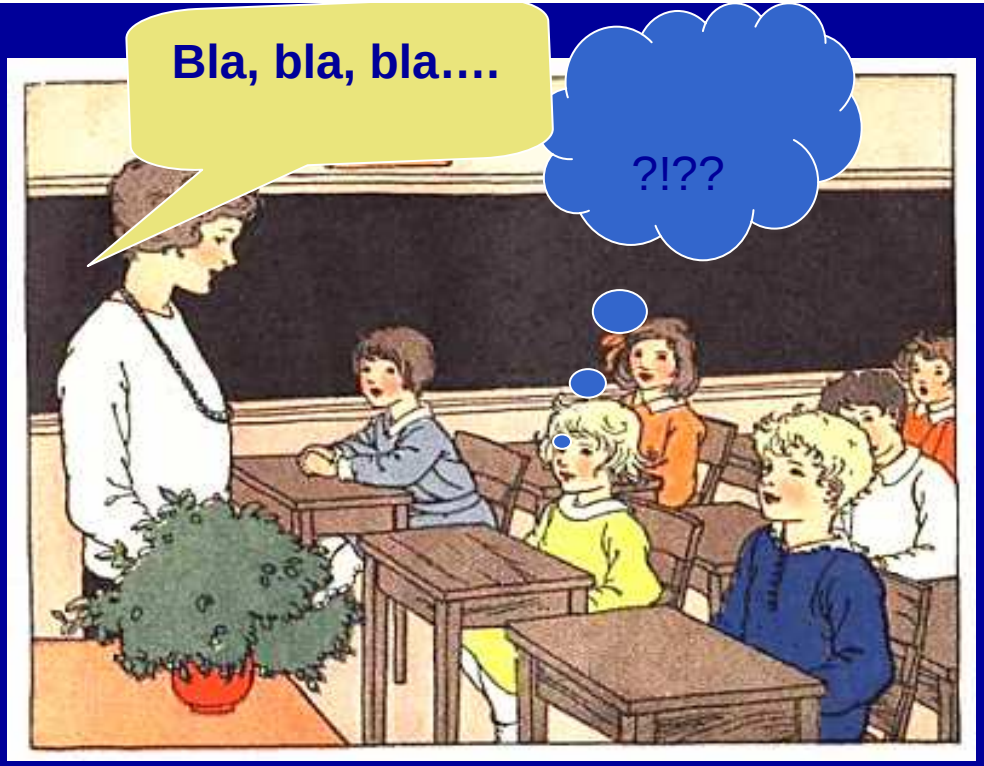
+ **CONTEXT** −

Integration CLIL conceptual framework

Contenuto *Knowledge structure*	**Operazioni Cognitive** *Thinking Skills*	**LINGUA** *CALP functions*	*Vocabulary Structures*
Classificazione / Concetti (*Experience*)	***Lower order TS*** •definire •identificare •classificare •……..	**DESCRIZIONE** •riconoscere elementi •classificarli secondo le loro caratteristiche comuni •trovare definizioni di… •descrivere l'informazione	Lessico specifico Strutture linguistiche
Principi / Processi *(Relationships)*	***Higher order TS*** •spiegare •fare previsioni •fare ipotesi •analizzare •Confrontare •applicare …..	**SEQUENZA** •prevedere gli esiti di un esperimento •fare ipotesi sui risultati •analizzare le parti di un tutto, identificare relazioni •trovare somiglianze e differenze •applicare uno schema per risolvere un problema •definire e rappresentare un problema	Strutture linguistiche Tipologie testuali
Valutazione *(Evaluation)*	•valutare •esprimere giudizi •individuare criteri di valutazione ….	**SCELTA** •verificare l'opportunità di idee o decisioni •giustificare le scelte •indicare priorità	Uso creativo del lessico, delle strutture e delle tipologie testuali

Lesson Planning

Subject content	**Conceptual level**	**Thinking skills**	**Language**	
			CALP Functions	*Vocabulary structures*
Les trois états de l'eau	Classification / concepts	***Mobiliser*** les connaissances ***Identifier*** ***Reconnaitre***	***Reconnaitre*** les 3 états de l'eau au labo Les ***identifier*** dans un schéma les ***décrire***	*Liquide, gazeux, solide* *C'est/ ce sont* *L'accord des adjectifs* *Le présent de l'indicatif*
The topic	is at this conceptual level	which involves these thinking skills	corresponding to these CALP functions	which will be modelled using these structures and vocabulary


Bla, bla, bla….
?!??

Le strategie

Le strategie

A ***strategy*** is a routine or procedure for accomplishing a goal.

A ***cognitive strategy*** is a mental routine, procedure or strategy for accomplishing a cognitive goal (J. Shiel, 2009)

Learning strategies are specific actions, behaviours, steps, or techniques students use -- often consciously – to complete learning tasks. Learning strategies are linked with teaching strategies, as good teachers use numerous teaching strategies to help students to learn (O'Malley & Chamot,1990**)**

Linking to past learning

“We learn by construction rather than instruction” (D. Marsh)

The core strategies

Scaffolding

Il termine **scaffolding**, introdotto in psicologia da Jerome Bruner e altri nel 1976 [1], significa letteralmente "impalcatura". Indica quelle strategie di sostegno e quella guida ai processi di apprendimento che consentono di svolgere un compito sebbene non si abbiano ancora le competenze per farlo in autonomia, riuscendovi grazie all'aiuto di un esperto, di un adulto o di un pari più preparato che fornisce indicazioni e suggerimenti, nell'attesa che si riesca a maturare una piena autonomia nello svolgimento del compito. *Wikipedia*

Link to past learning

Brain storming

KWL strategy

K (What I know)	W (what I want to know)	L (what I have learned)

Experiential learning

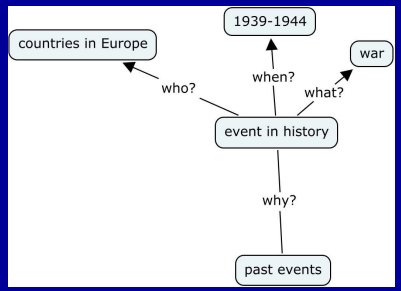
scaffolding

Verbal scaffolding

- Teacher talk (questions, praphrases…
- language activities

Procedural scaffolding

Visual (graphic) scaffolding



Learning from reading

DARTS – Directed activities related to texts

Reconstruction DARTS

(using modified texts)

1. ***Completing text, diagram or table***

   CLOZE procedure

2. ***Unscrambling and labelling disordered and segmented texts***

   MATCHING, LABELLING

3. ***Predicting***

   writing the MISSING PARTS of a text

Analysis DARTS

(using unmodified texts)

1. ***Marking and labelling***

   UNDERLINING,

   MARKING specified words or sentences

   LABELLING, SEGMENTING

2. ***Recording and constructing***

   Filling TABLES

   QUESTIONS answering

   MULTIPLE CHOICE

   KEY POINTS / SUMMARY

Wellington J., Osborne J. (2001),*Language and Literacy in Science Education,* Open University Press, p. 46

A taxonomy of the words of science

Word categories	Examples	Strategies
Naming words identifiable, observable, real objects or entities. NB, Some naming words may be developed as concept words.	*Trachea, meniscus, vertebra, pollen, saliva….* •science laboratory tools: Bunsen burner, spatula, conical flask, beaker •objects non visible with naked eyes: cell, atom…	*Matching* words and pictures *Matching* words and definitions *Labelling* a picture *Classifying* vocabulary in categories *Identifying* prefixes and suffixes
Process words words at a higher level of abstraction. Certain processes are "visible" or at least *"showable".*	•Evaporation , condensation , photosynthesis, fusion, vaporization, crystallysation, fusion, distillation •evolution	*Linking* words through diagrams to illustrate processes *Representing* processes through graphic organisers
Concept words The largest category of words. They are part of a network of other words, all related together, the understanding of one word (i.e. power) depends on prior understanding of other words (work, energy)	•words that have both a *scientific* and an *every day* meaning: *plant, nutrition, atom, electron, mass* •words used to denote *theoretical constructs* or *unobservable constructs: atom, electron, element, compound*	*Explaining* concepts through graphic organisers Answering *questions*

Wellington J., Osborne J. (2001),*Language and Literacy in Science Education,* Open University Press, p. 46 (adapted)

Mappe concettuali e CLIL

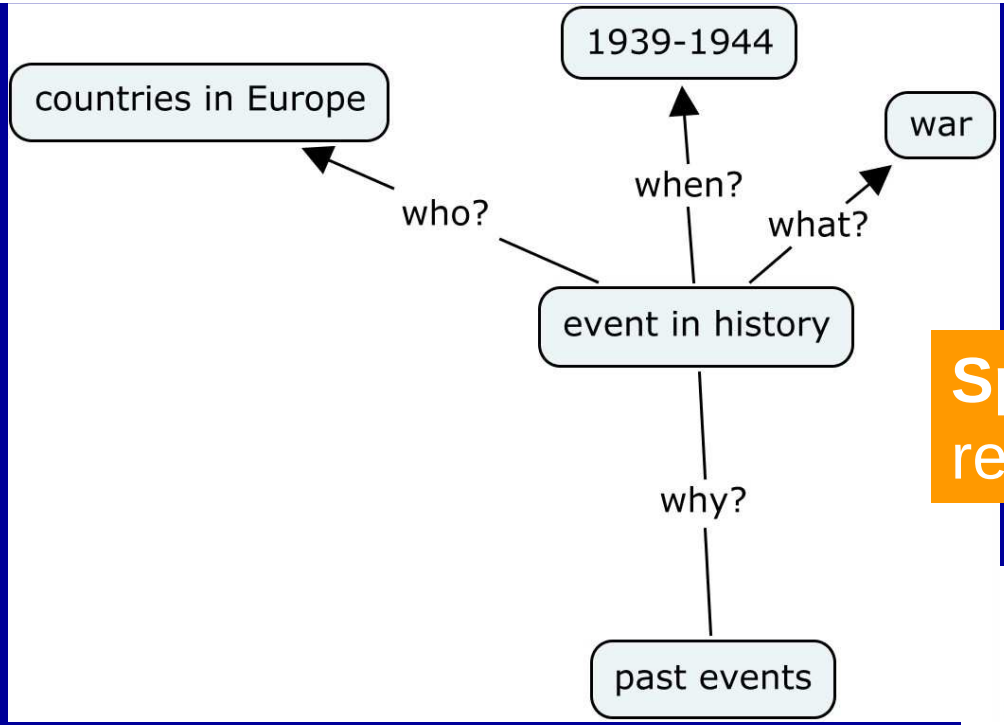
Dimensione spaziale della conoscenza rispetto a quella lineare del testo

Consentono l'identificazione delle parole chiave che denotano un sapere e di passare dal livello lessicale a strutture più complesse

Consentono nella programmazione didattica di organizzare i contenuti relative in modo logico.

Rinforzano la conoscenza pregressa e favoriscono quella nuova

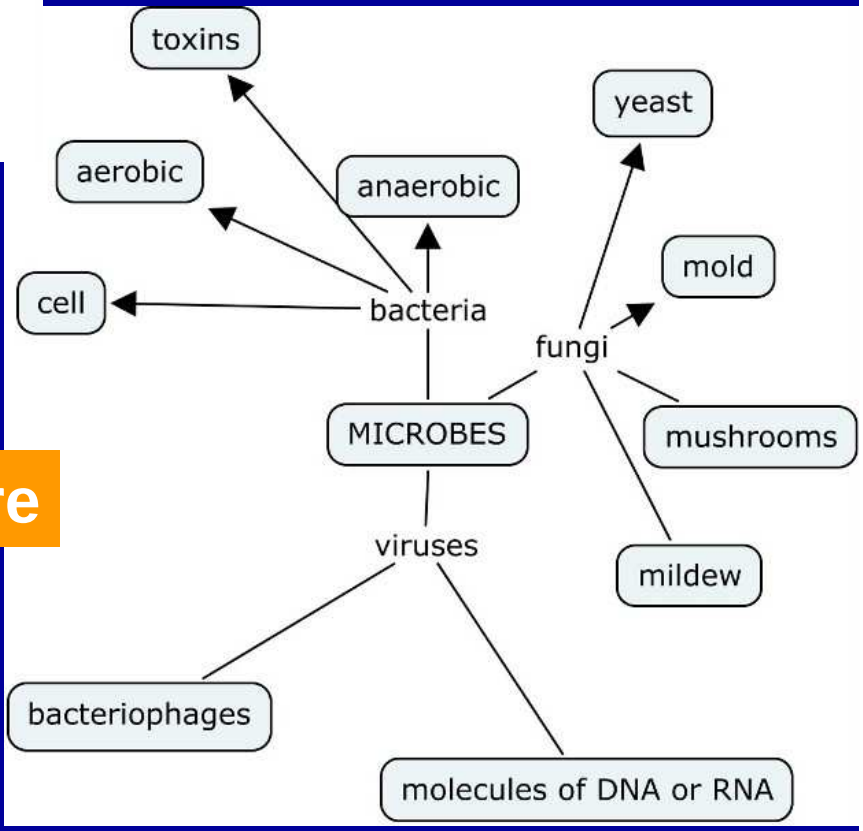
GRAPIHIC ORGANIZERS



Concept maps

Question map (H.Parviainen)

Spiegare (cause, effetti, relazioni spazio temporali



classificare

Hierarchical concept map (H. Parviainen)
(LICI project www. lici.utu.fi)

Step 1 - The anatomy and physiology of the eye

Definire / classificare

GRAPHIC ORGANIZERS

The eye — is the → organ — of → sight

The eye — is composed by → lens

lens — required for → fine focusing

lens — required for → accomodation

The eye — is composed by → retina

retina — containing → receptors cells

receptors cells — that are → cones

cones — used for → detailed colour vision

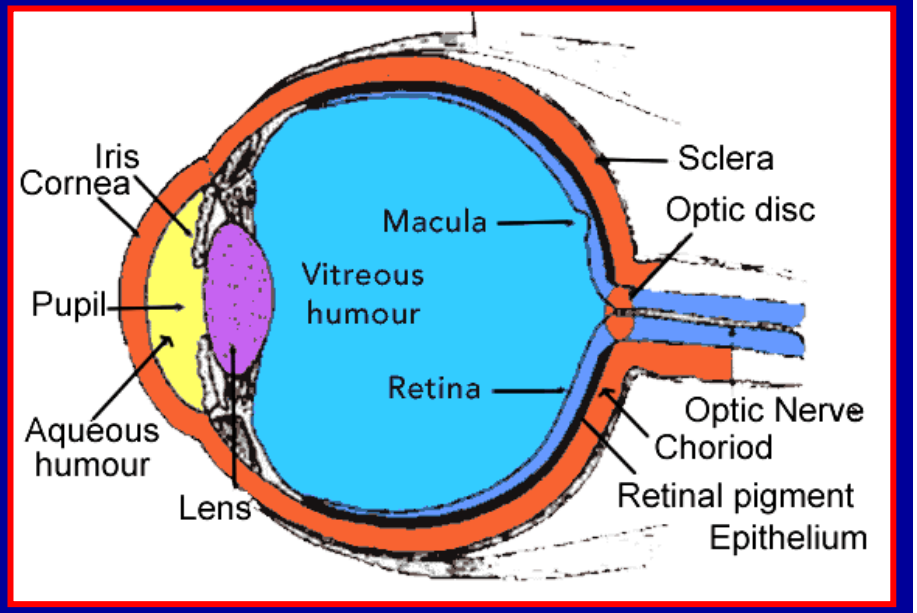
receptors cells — that are → rods

rods — used for → black and white vision

receptors cells — in the → fovea

The eye — is composed by → cornea

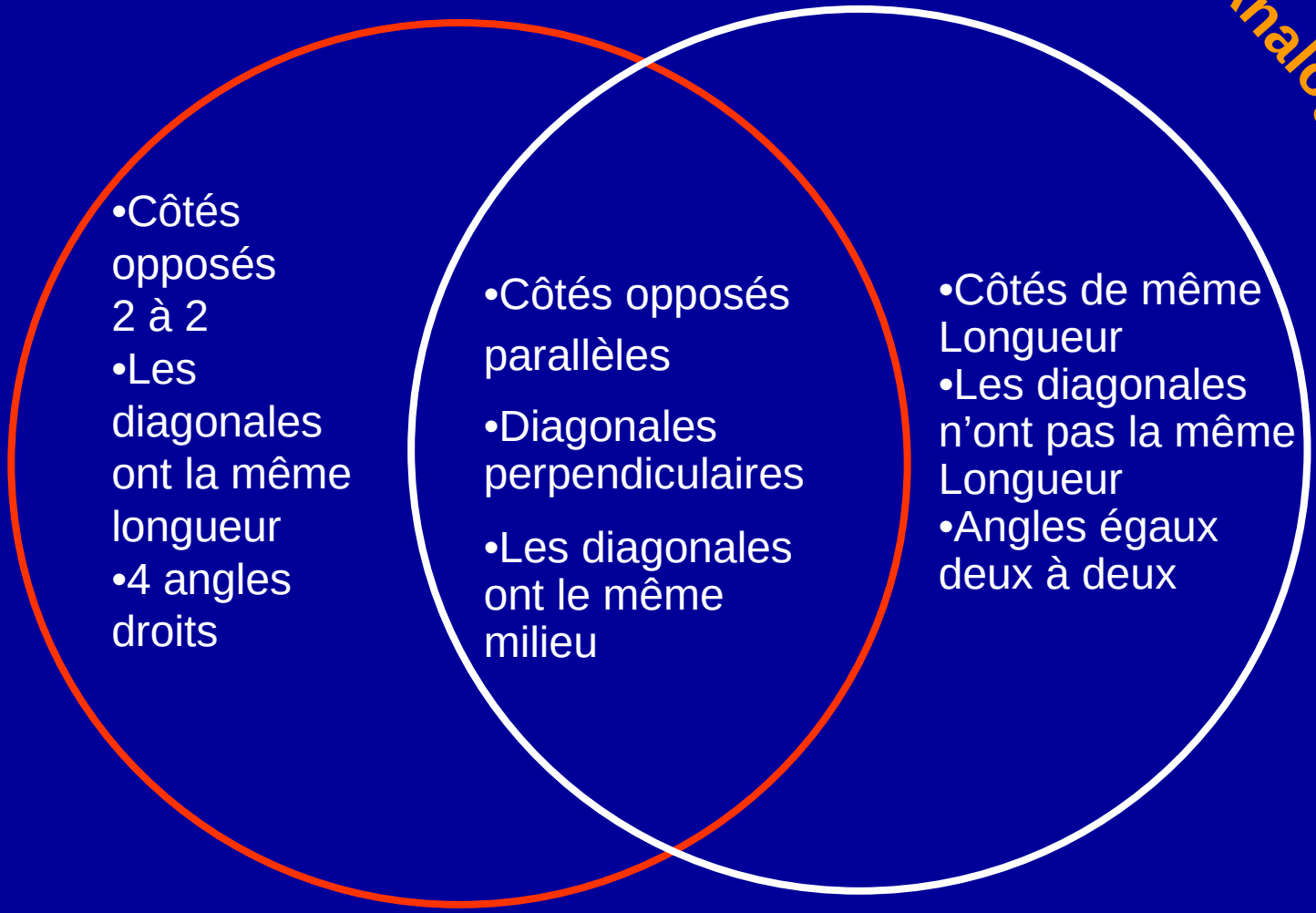
cornea — required for → most focusing



Venn diagram

GRAPIHIC ORGANIZERS

Analogie e differenze



RECTANGLE

LOSANGE

Napoleone e Hitler
tratto da: Il Giornale, 11.06.2005

T - CHART

confrontare

EYES EVOLUTION

Animals eyes

Distant ancestors

Vertebrates

Two kinds of lightsensitive organs:

1.A simple two celled prototype eye

2. The photoclock was a part of the brain

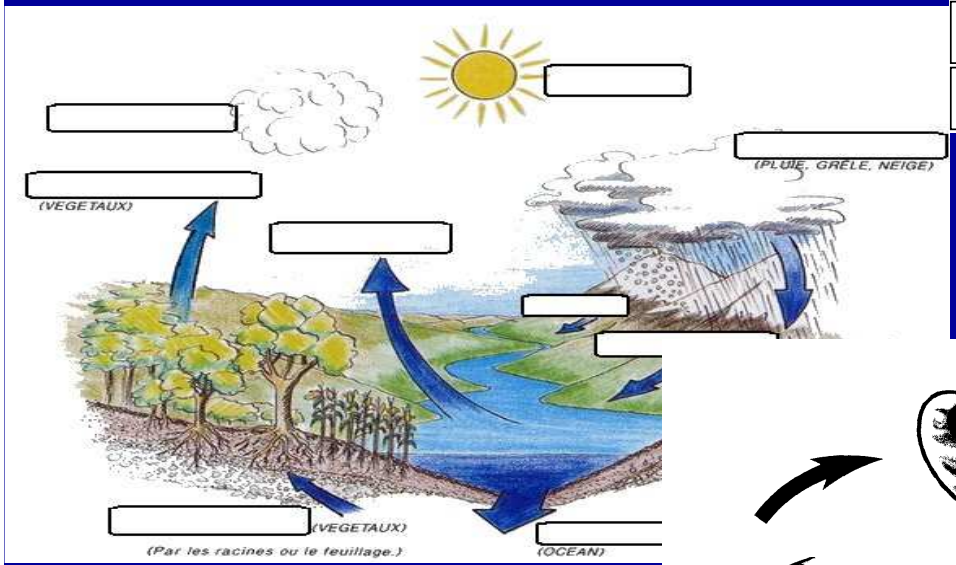
ate eyes incorporate both kinds of photoreceptors into its retina

Their orientation with respect to the light source is opposite that of the photoreceptors in the arthropod and squid eyes.

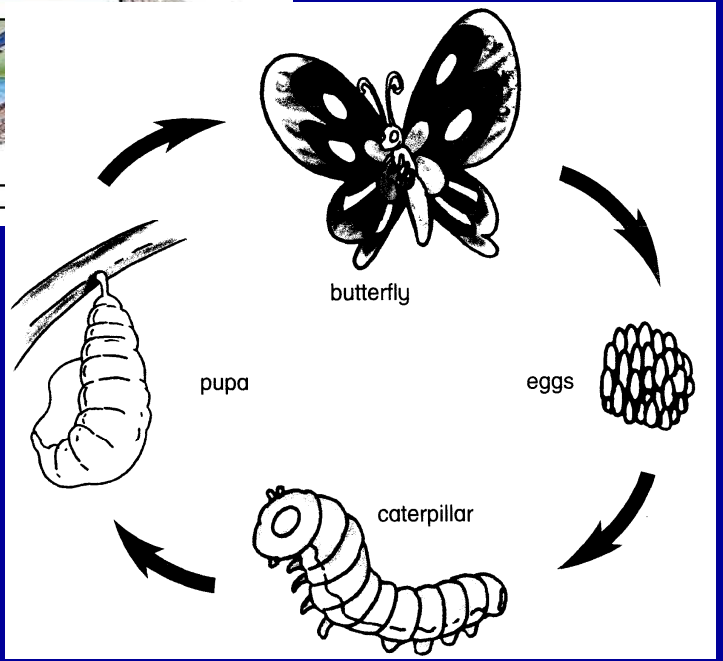
*Each animal eye evolved from simpler **photoreceptive structures** in a distant common ancestor of the arthropods, cephalopods, and vertebrates. The ancestor possessed **two kinds of lightsensitive organs** (upper half of diagram), each one endowed with a distinct type of photoreceptor, as well as with light-sensitive proteins called R-opsin and C-opsin, respectively. One organ was a simple two-celled prototype eye; the other, called the brain photoclock, was a part of the animal's brain and played a role in running the animal's daily clock. The arthropod and squid retinas (red) incorporated the photoreceptor from the simple prototype eye, whereas the vertebrate eye incorporated both kinds of photoreceptor into its retina (red and blue). Rods and cones, the photoreceptors of human vision, are shown in blue. Their orientation with respect to the light source (black arrows) is opposite that of the photoreceptors in the arthropod and squid eyes.*

Processi / sequenze

Le cycle de l'eau : complétez le schéma avec les mots suivants : **infiltration, précipitation, ruissellement, absorption, évaporation, écoulement, énergie, condensation, évapotranspiration, fonte**



Write about the life cycle of the butterfly using the diagram



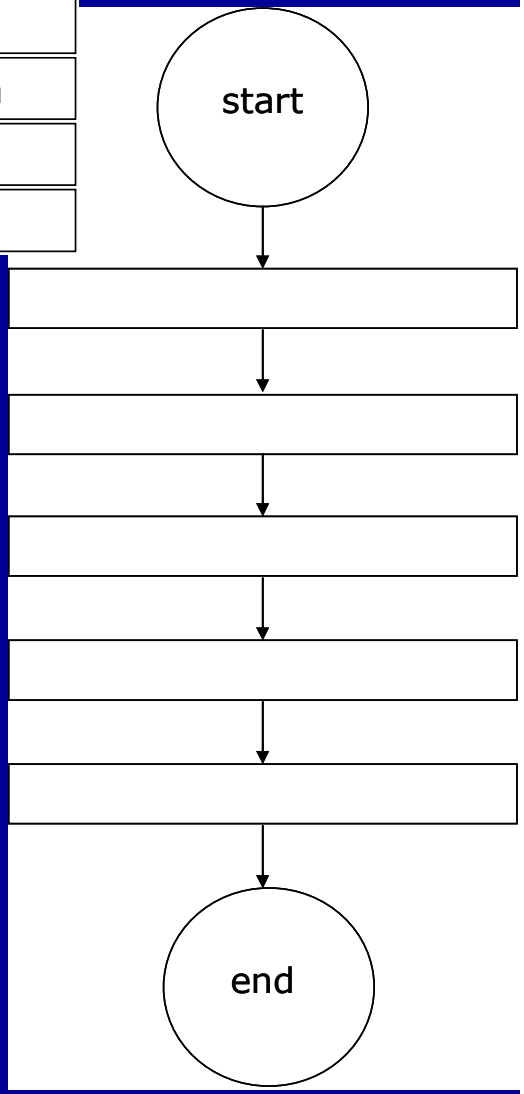
Thermal energy release

Steam production

Electricity production

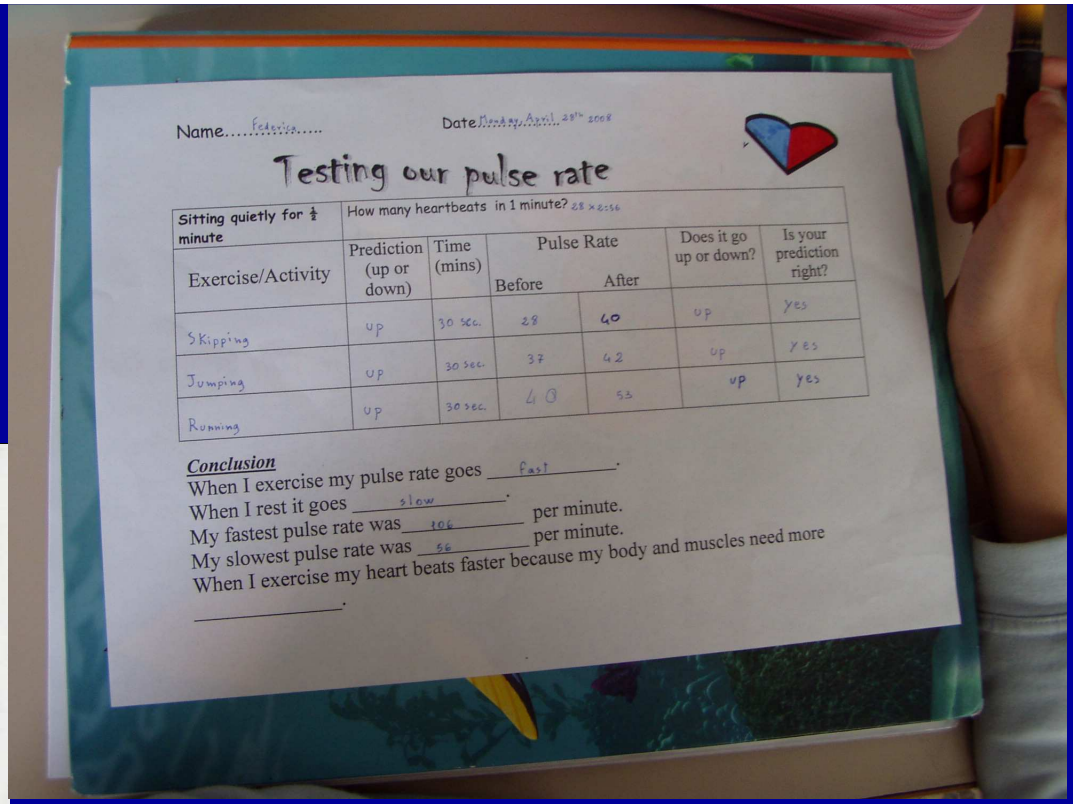
Fission of uranium

Water heating



the nuclear power plant for electricity production.

FRAMES



Name.....Federico..... Date Monday, April 28th 2008

Testing our pulse rate

Sitting quietly for ½ minute	How many heartbeats in 1 minute? 28 x 2=56					
Exercise/Activity	Prediction (up or down)	Time (mins)	Pulse Rate Before	Pulse Rate After	Does it go up or down?	Is your prediction right?
Skipping	up	30 sec.	28	40	up	yes
Jumping	up	30 sec.	37	42	up	yes
Running	up	30 sec.	40	53	up	yes

Conclusion

When I exercise my pulse rate goes fast.
When I rest it goes slow.
My fastest pulse rate was 106 per minute.
My slowest pulse rate was 56 per minute.
When I exercise my heart beats faster because my body and muscles need more _____.

GIULIA, LAURA, ADRIANA

Lingua, Cultura e Scienze

10-15 octobre 2004 Comenius meeting . Workshop Expérience au labo

Extraction de pigments à l'aide de solvants

Matériel: feuilles de végétaux , éprouvette, éther de pétrole ,méthanol, benzène

- couper des feuilles de végétaux et les broyer dans un récipient pour obtenir un composé

- ajouter une petite quantité de méthanol (solvant) pour l'extraction des trois pigments (caroténe, xantophille et chlorophille)

- mettre la solution obtenue dans une éprouvette afin que tous les pigments se mélangent;
- après que la partie inutile est tombée au fond du tube, mettre la solution utile dans une autre éprouvette;
- ajouter de l'éther de pétrole qui ne se mélange pas avec l'autre solvant;
- après qu'ils se sont séparés, on peut voir deux couches: la jaune qui contient le caroténe et la xantophille et la verte, qui contient la chlorophille.

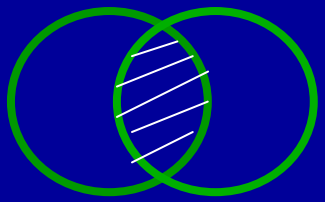
- après avoir prélevé seulement la couche jaune et l'avoir mise dans une autre éprouvette ajouter du benzène et laisser reposer le tout.
- observer: le caroténe devient rouge, la xantophille reste jaune

Observations:

A quels pigments peut on lier les deux couches?

couche verte → chlorophille
couche jaune → couche rouge → caroténe
couche jaune → xantophille

Assessment



What?

Language course	CLIL approach
• learning **language** • focus on forms and skills • language as a set of grammar rules, communicative skills	• learning **content** through **language** • focus on meaning • language as *a resource* for making meaning in an academic context
"What is the student's ability to use linguistic skills? Are forms grammatically correct?" Focus on *mistakes*	" Does s/he use the appropriate forms to highlight the meaning in a certain academic context?" Mistakes are viewed in a broader context

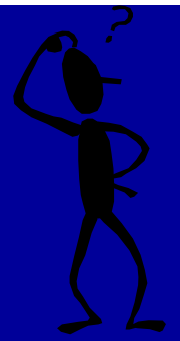
Mohan B., Huang J. (2002)
LICI project http://lici.utu.fi

Authentic Assessment

A form of assessment in which students are asked to perform real-world tasks

Traditional	*Authentic*
Select the right answer	Perform a task
Artificial context	Real context
Memorize/recall	Apply / Create
Teacher structured	Student structured

The assessment questions in CLIL



- At which level of complexity is ***content*** learnt?

Content

- Which ***thinking skills*** are involved?

Cognition

- What ***language resources*** are used?,

Communication

- Is the student autonomous in his performance?To which extent ***support*** is needed?

Scaffolding

A Matrix for Integrated CLILCompetences

Scaffolding

	Strongly supported by visuals, contextual cues and / or language structures	***Scaffolding partially removed***	***Independent work***
evaluation / **choice**	•explain the results of a process •compare different results •justify choices	•explain the results of a process •compare different results •justify choices • Elaborate new content	•explain the results of a process •compare different results •justify choices •Elaborate new content
Higher order thinking skills			
Principles processes / **sequences**	•understand principles / processes •collect and organise data •express general principles •draw conclusions •Apply models	•understand principles / processes •collect and organise data •express general principles •draw conclusions •Apply models	•understand principles / processes •collect and organise data •express general principles •draw conclusions •Apply models
Experience Classification / **description**	•describe things / objects concepts •classify words into categories •recognize words •understand new information •recognize previous knowledge in a new context	•describe things / objects concepts •classify words into categories •recognize words •understand new information •recognize previous knowledge in a new context	•describe things / objects concepts •classify words into categories •recognize words •understand new information •recognize previous knowledge in a new context
Lower order thinking skills			

Content — **Language**

Thinking Skills


Thank you!
t.barbero@alice.it