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CLIL Pedagogy for Secondary Teachers

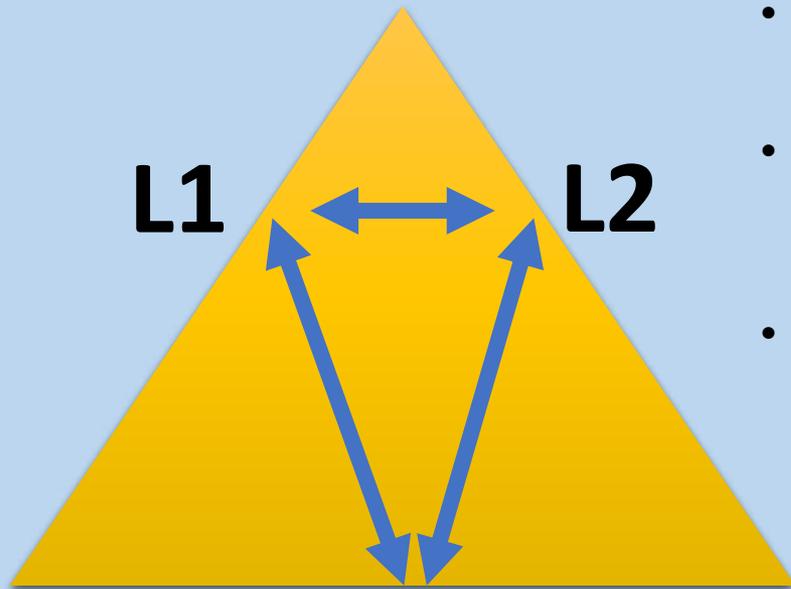
Cambridge - 2018
Dr Diana Hicks

Trinity College - Dublin
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Dublin
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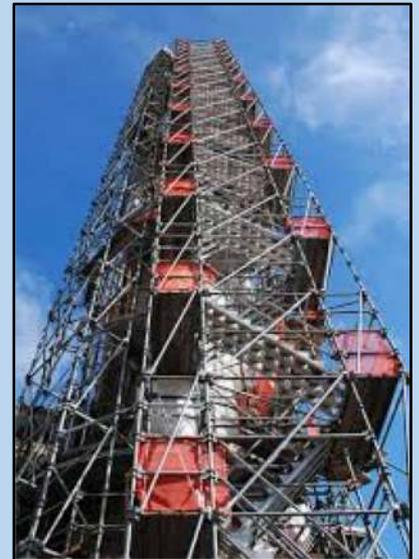


Content Language Integrated Learning

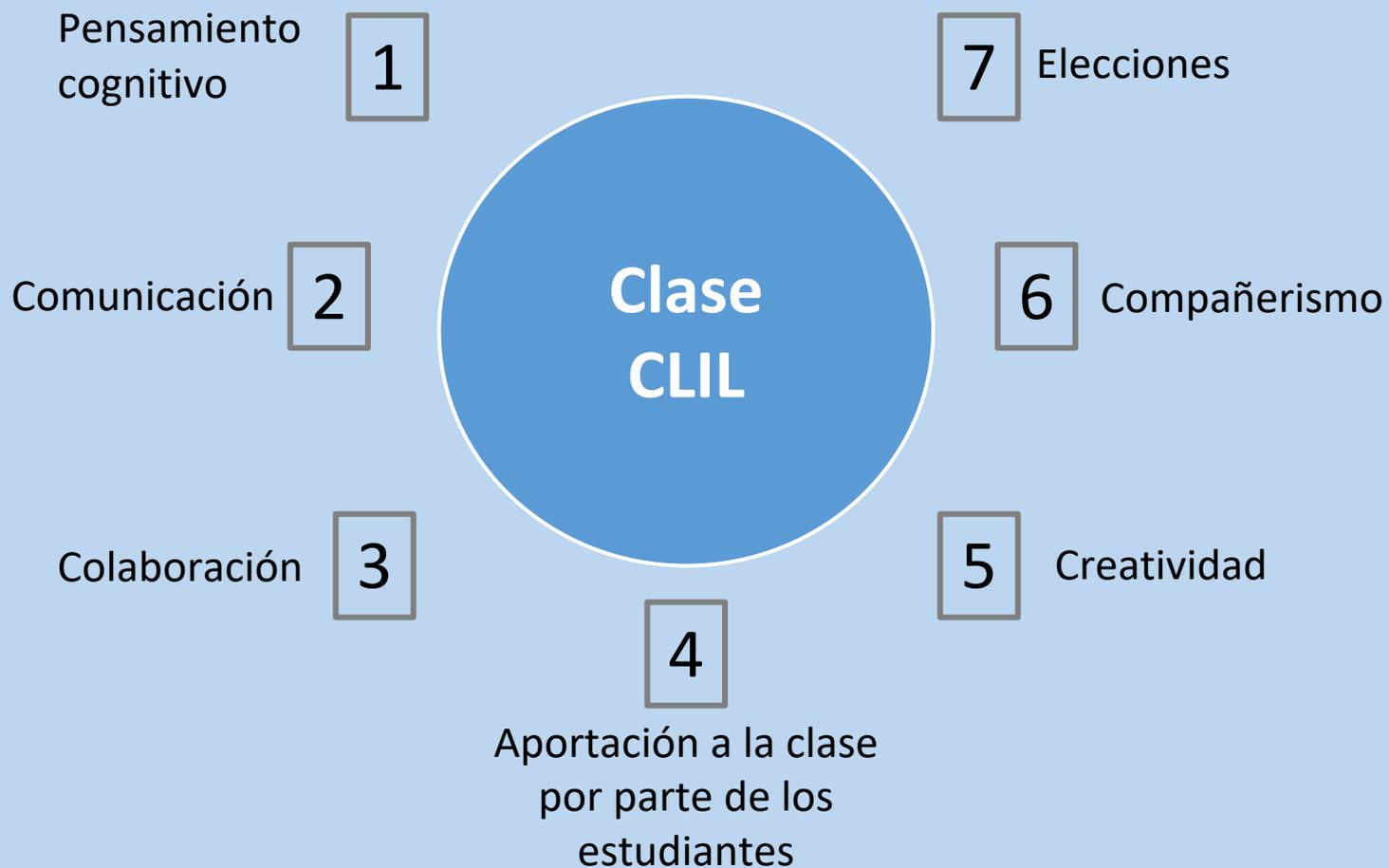


**Content
inclusive**

- CLIL es un **proceso de aprendizaje**.
- La **lengua materna (L1)** es igual de importante que la **segunda lengua** en nuestro caso el **inglés (L2)**.
- La **prioridad** siempre será la **materia/asignatura**, en ningún caso la **segunda lengua**.



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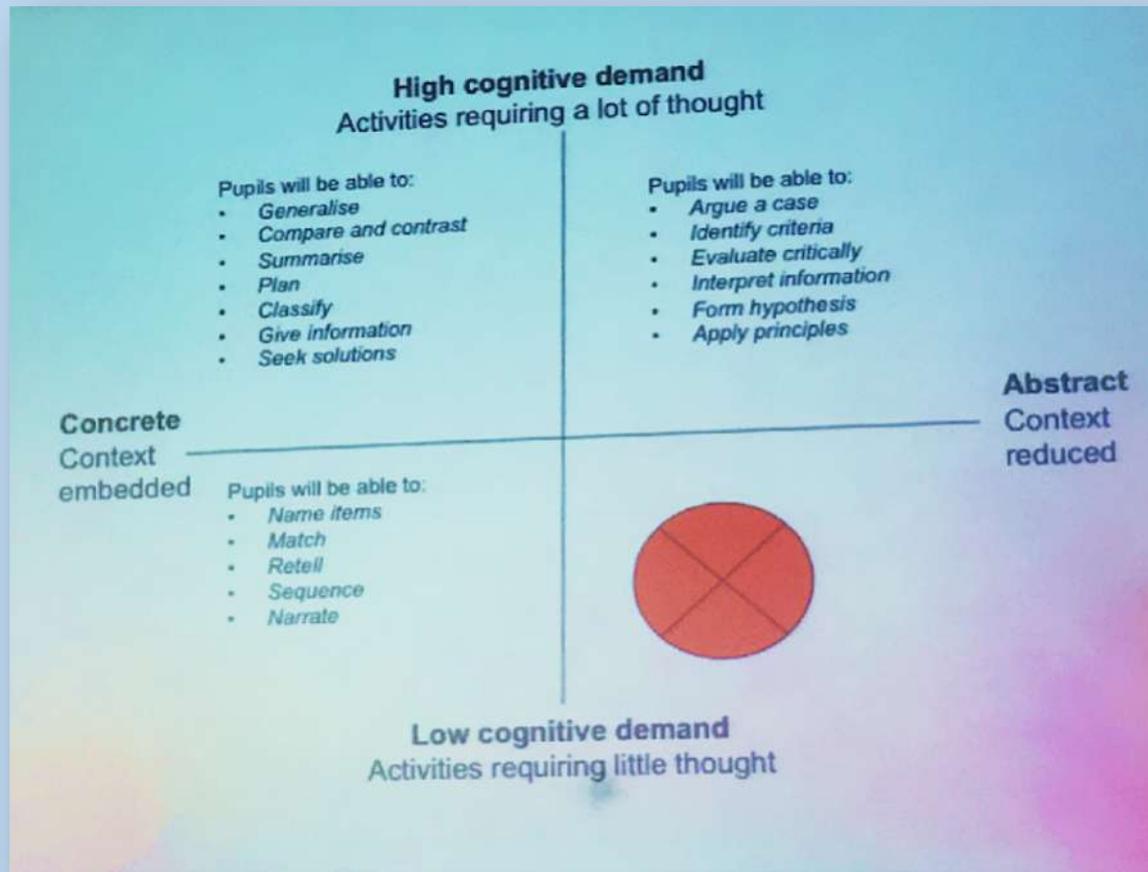
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1 Pensamiento cognitivo

Hay que diferenciar entre dos tipos de actividades:

- ❑ ***LOTs (lower order thinking tasks):*** en este tipo de actividades el alumno tiene que resolver actividades en las que tiene que generar listas, relacionar, rellenar huecos, ordenar una serie de acontecimientos,...
- ❑ ***HOTs (higher order thinking tasks):*** en este tipo de actividades el alumno tiene que elaborar una respuesta, analizar, comparar, hacer predicciones, explicar,...

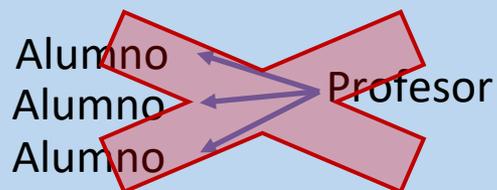
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2 Comunicación

En esta nueva metodología la comunicación ha cambiado, la dirección de la comunicación ya no parte del profesor hacia sus estudiantes sino que ahora esa comunicación es en ambos sentidos.



3 Colaboración 4 Aportación a la clase por parte de los estudiantes

En clase con metodología CLIL se busca que los alumnos colaboren entre ellos para poder así construir poco a poco su propio aprendizaje.

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5 Creatividad

Los alumnos tiene que hacer/crear durante las clases, realizar actividades y tareas en las que puedan crear y ser creativos.

6 Compañerismo

En el mundo de la docencia es importante el compañerismo, colaboración e intercambio de ideas a la hora de diseñar sesiones CLIL en nuestra asignatura.



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7 Elecciones

Como docente de sesiones CLIL hay que hacer varias elecciones:

- **Tipo de tarea o actividad:** taxonomía de BLOOM (evaluación, síntesis, análisis, aplicación, comprensión, conocimiento)
- **Modalidad/Forma en que vas a llevar a cabo las tareas:** individual, por grupos, por parejas,...

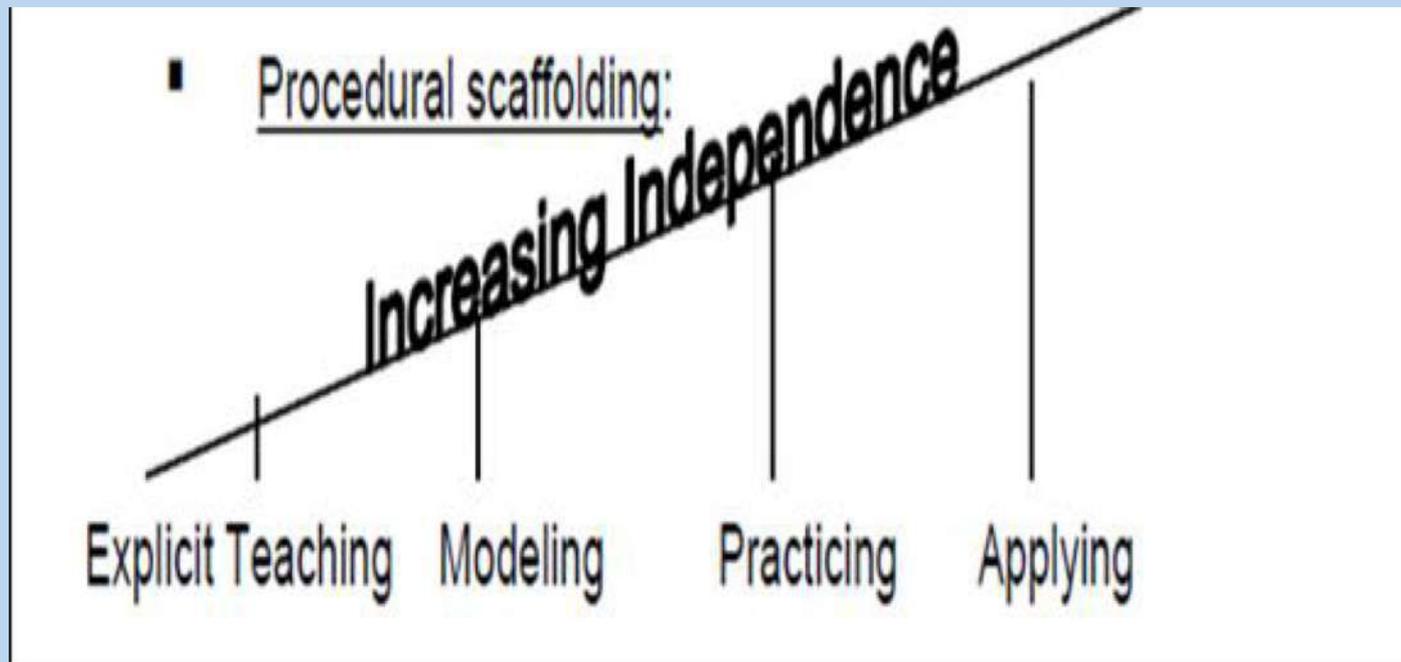


Estructura de una sesión CLIL

Etapa	Estrategia	Habilidad puesta en práctica
1.Comienzo Que la temática venga de los alumnos, así aumenta si interés. (L1/L2)	Lluvia de ideas Preguntas Discusión Elaborar diagramas/esquemas/dibujos	Encuesta, predicciones, audios, planificación, organización, compartir ideas, estimaciones.
2.Descubrir Desarrollar (L1/L2)	Videos Visitas Búsqueda de información Lecturas Experimentos	Resúmenes, observar, seleccionar información, lecturas, buscar recursos, comparar y contrastar, hacer conexiones entre ideas, gestionar tiempo,
3.Solucionar (L2/L1)	Clasificación, agrupar Gráficos Secuencia de procesos narrativos	Clasificar, colaboración, presentación de ideas, interpretar, escritos, diseñar, pruebas, ensayos,
4.Reflexionar (L1)	Autoevaluación Coevaluación Evaluación por parte del profesor Publicar los resultados Elaborar un diario de aprendizaje	Respuestas, clarificar, representación, interpretación, publicidad,

Scaffolding

“What learners can do today with support, they can do alone tomorrow” -Vygotsky -



Scaffolding

Scaffolding can...

- “Enganchar” y motivar a los alumnos
- Dar una dirección que seguir
- Mantener a los alumnos activos en las tareas.
- Guiar a los alumnos hacia recursos de utilidad.
- Reducir sorpresas - frustraciones - decepciones - incertidumbres
- Lograr un aprendizaje más individualizado.

Scaffolding

How can we provide scaffolding?

- Create interest - activate prior knowledge
- Break tasks into smaller chunks/steps
- Provide support - to scaffold input and output

Before tasks: pre-teach language - vocabulary
use visuals /realia to introduce
concepts

/ model tasks

During tasks: add in word banks, glossaries,
substitution tables, writing frames.

After tasks: provide constructive feedback

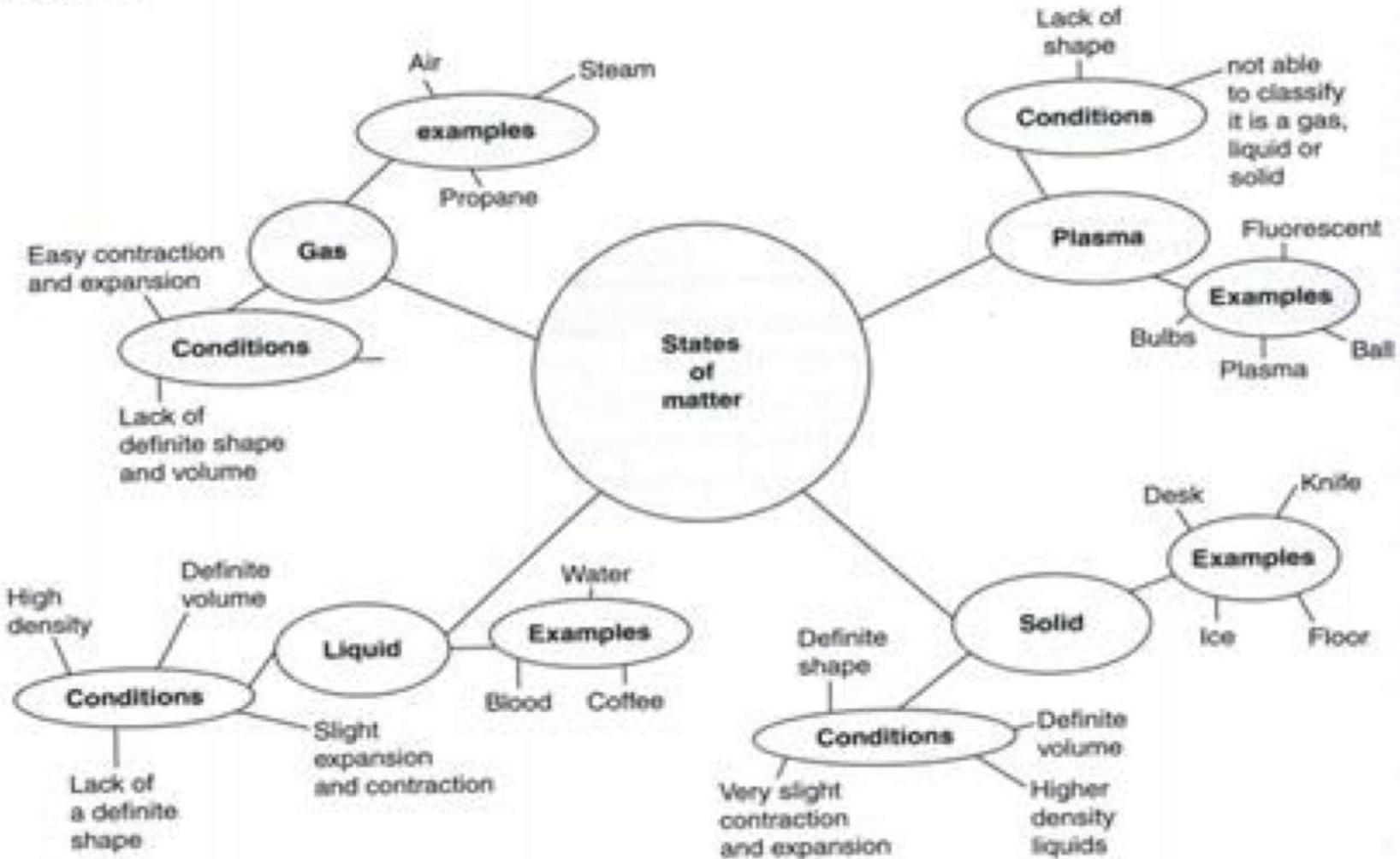
Scaffolding

Scaffolding uses:

- Visuals - Graphic Organisers
- KWL charts
- Using prior knowledge
- Pre-teaching vocabulary/language
- Eliciting
- Speaking, Reading and Writing Frames

Scaffolding - Visuals - Graphic Organisers

Spider map



Scaffolding

K-W-L (Ogle, 1986) is an instructional reading strategy that is used to guide students through a text. Students begin by brainstorming everything they Know about a topic. This information is recorded in the K column of a **K-W-L** chart.

KWL		
What I Know	What I Want to Know	What I Learned

Scaffolding - Speaking Frames

Create a Speaking Frame for a PE lesson in which learners are practicing and assessing their long jump skills.

Box 4.12: Speaking frames

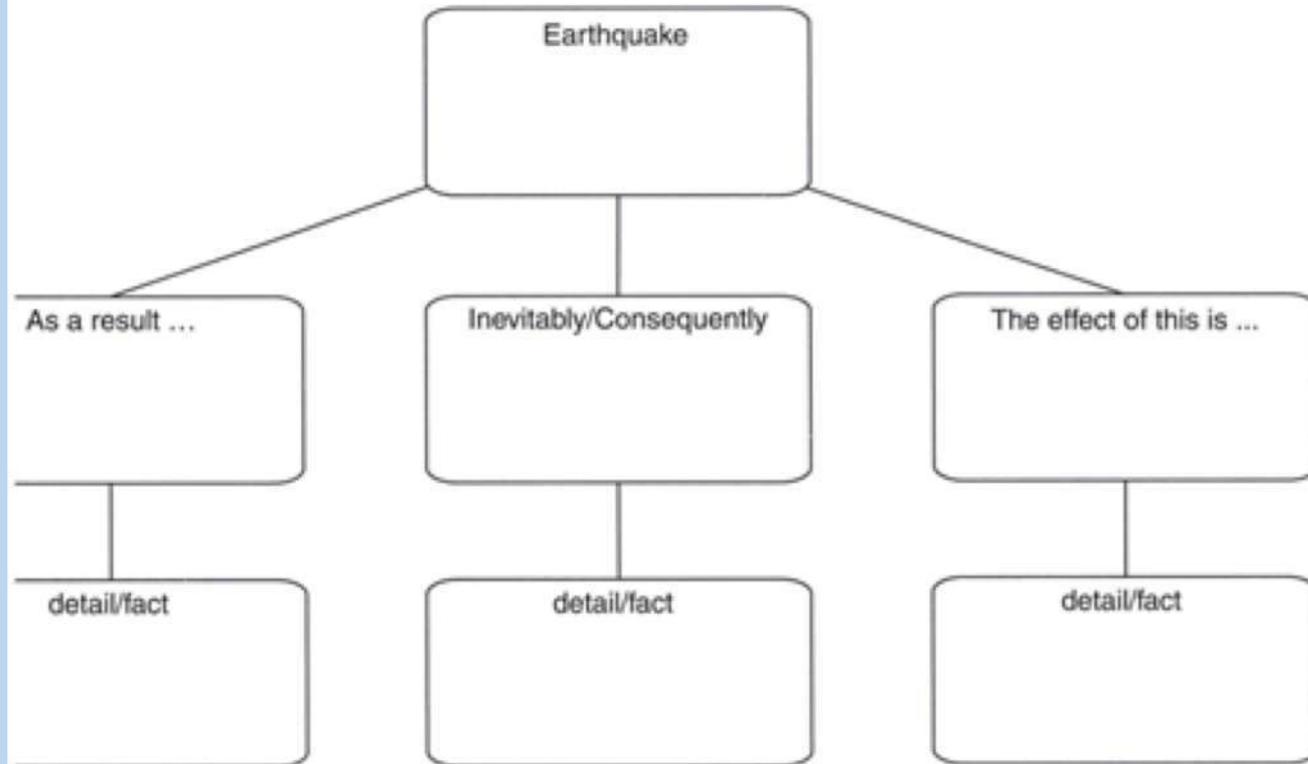
An example for a PE lesson on long jump

Your	run up take off position in the air landing	is	too slow unsteady too early too late with the wrong foot too high not high enough on one foot good excellent fine perfect
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Scaffolding - For writing tasks

: Framing writing

: explanation – effects of earthquakes



CLIL Activities

Activities © Cambridge University Press 2011

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Scaffolding - For writing tasks

CLIL Activities

Box 5.6g: Framing writing

History: discussion – Hitler's reasons for annexing Austria

1: What were the different reasons for Germany annexing Austria? Complete each box.

Personal reasons	Political reasons
Economic reasons	Cultural reasons

Hitler annexed Austria for a number of reasons. Write your reasons out in sentences. Firstly, there were personal reasons. These were ...

Next, there were political reasons. These were ...

Then there were economic reasons. These were ...

Lastly, there were cultural reasons. These were ...

The most important of these reasons is ...

I think this is because ...

From *CLIL Activities* © Cambridge University Press 2012

PHOTOCOPIABLE

Scaffolding

Box 5.6c: Framing writing

Maths: report describing the results of a graph about traffic

Learners have made a graph (histogram) which illustrates how many cars of different colours they have counted on the road near their school. Their task is to comment in writing in pairs on the graph they have made.

Our names: 1 2

Title (write an interesting title here)

On..... (date), we observed

..... Our graph shows the results of our observations, as follows. Our task was (write here what you had to do)

Here are our results. Firstly, we counted a total number of cars. We noticed that (write something about percentages here)

The results show the relative popularity of the colours. The most popular car colour is

..... We think this is because

The least popular car colour is..... We think this is because

Other popular car colours are

The most interesting thing that we noticed about the colour of the cars was

..... because

What we found difficult about the activity was

Autoevaluación de una sesión CLIL

Time	Teacher is doing what?	Pupils are doing what?	Task-cognitive/creative/collaborative/Critical thinking/communicative	Outcome/Production/Evaluable result/Evidence of learning
10.00-10.05				
10.05-10.10				
10.10-10.15				
10.15-10.20				
10.20-10.25				
10.25 - 10.30				
10.30-10.35				
10.35-10.40				
10.40-10.45				
10.45-10.50				
Total times				

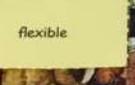
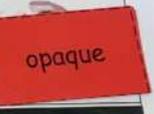
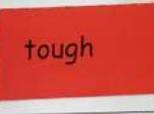
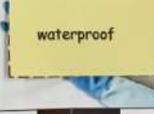
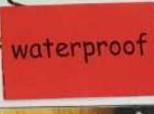
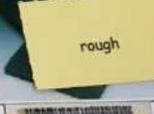
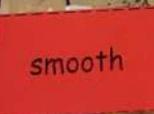
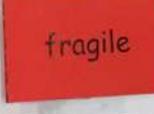
Ejemplos actividades CLIL

Connect Four

Kuskey Riders
Northfield
Rockhill Bralake
Sour Storm VS
Melton Alence VS

Qualities of Materials Connect Four Board

How To Play
This game is best played one pair against another. You need two different colour sets of the qualities cards. Shuffle the cards and place in two piles. Pairs take turns to pick a card for their colour, and place it on the board. Everyone has to agree that the quality on the card fits the picture. The pair with the first four cards in a line vertically, diagonally or horizontally wins.

				
absorbent				
hard				
				
				
				

<http://collaborativeliving.com/qualitiesconnectfour.pdf>

Ejemplos actividades CLIL

Vertebrate Connect Four Game Board

has a moist skin but no scales	lays eggs and has feathers	breathes in water	does not have feathers but is warm blooded	lays eggs on land and is cold blooded
feeds milk to its young	has gills	lays eggs in water and does not have scales	lays eggs	has scales and breathes in water
has scales but does not have gills	lays eggs in water but does not have scales	is warm blooded but does not have fur nor hair	can breathe in air or in water	gives birth to live young
lives in water and has scales	has fur or hair	lays eggs		
lays eggs and is warm blooded	lays eggs and is cold blooded	does not lay eggs and is warm blooded		

HOW TO PLAY VERTEBRATE CONNECT FOUR

You need 4 people, one sponsored and two teams of (different colours). Work with your partners to read names of the cards. Each pair takes a set of cards and the other cards and places them in a pile to read. They take it in turn to read over their cards. They decide where to put it on the board. The decide where to put it on the board. The decide where to put it on the board. You might find it useful to have some check whether you are right.

<http://www.collaborativelearning.com/vertebrate4.pdf>

Animals and Rocks

ROCKS

Secondary Rocks
Metamorphic Rocks
Igneous Rocks

Examples

Do you know any other example?

MINERALS

Silicate Mineral
Non-silicate Mineral

Example

Rock Dominoes Game

As magmatic, they are formed from molten magma, which is a mixture of molten rocks.

Formed by heat and pressure that change the minerals themselves, but not the rock.

Formed when very deep sediments accumulated and are compressed and cemented by pressure.

They not contain silicon.

They contain oxygen and silicon.

Geology Connect Four

Igneous Rock	Silicate mineral	Sedimentary Rock	Non-silicate mineral	Silicate mineral	Metamorphic Rock
Non-silicate Rock	Sedimentary Rock	Metamorphic Rock	Non-silicate mineral	Non-silicate mineral	Igneous Rock
Metamorphic Rock	Igneous Rock	Metamorphic Rock	Igneous Rock	Silicate mineral	Sedimentary Rock
Silicate mineral	Igneous Rock	Silicate mineral	Sedimentary Rock	Metamorphic Rock	Igneous Rock
Non-silicate mineral	Metamorphic Rock	Sedimentary Rock	Igneous Rock	Non-silicate mineral	Silicate mineral

Quartz, Gold, Limestone, Gneiss, Marble, Granite, Micas, Pyrite, Basalt, Sandstone, Shale

Connect Four

Ejemplos actividades CLIL

Transfer of energy- shared comprehension

From Science: Kauser, S and Donaghue, S (OUP) pp147-8

Text 1: Introduction: thermal energy

The transfer of heat energy is very common. When objects are at different temperatures, heat or thermal energy is transferred from the object at a higher temperature to the object at a lower temperature. When atoms in solids, liquids or gases gain heat energy they vibrate and movement of these atoms increases. As an object reaches a higher temperature the atoms gain more energy and motion of these atoms increases. When a liquid is heated particles gain kinetic energy and are able to vibrate more rapidly. When particles have gained enough energy to reach the surface of the liquid they are able to escape. When particles leave the liquid they become vapour. This process is known as evaporation.

Text 2 : Conduction

This process involves the transfer of heat energy from the hotter part of a solid to a colder part of a solid. Particles in the hotter part of the substance begin to vibrate more. As they collide with the cooler particles around them they pass on these vibrations and transfer energy. Energy continues to transfer from particle to particle until all the particles have the same energy. Different materials conduct heat differently. Metals are very good conductors of heat, but non-metals are poor conductors of heat. Metals contain free electrons which have a greater amount of kinetic energy and are able to transfer heat. Solids and liquids are poor conductors and gases are even poorer. Poor conductors of heat are used as insulators. Insulators are used to keep things hot or cold.

Text 3: Convection and Radiation

Convection takes place in liquids and gases as both of them have the ability to move or flow. When liquids or gases are heated they expand and their density decreases. As the hotter parts of the liquid or gas become less dense they rise and cooler parts sink. This allows the substance to flow so that cooler parts can be heated. This is called a convection current.

Radiation

All objects emit radiation. The hotter the object is the more radiation it emits. Radiation emitted from an object is in the form of a wave and is usually infrared radiation. Radiation has the ability to travel through gases and through space. For example, radiation from the Sun travels through space to the Earth's surface and when it reaches the earth's surface it may be absorbed. Dull dark objects are better at emitting radiation and absorbing radiation than light shiny objects. Houses in hot countries are painted white so that less heat is lost and the inside stays cool.

Se divide el grupo de clase en tres grupos y a cada uno se le da un texto diferente relacionado con el mismo tema. A continuación se reparten preguntas a cada uno de los grupos que tendrán que contestar con la información que viene en su texto. Por último se pone en común toda la información extraída de cada uno de los textos. De esta forma la información parte de los propios alumnos.

Work in a group of three. Choose a text. Circle your questions .
Read your text and answer your questions. Share with your partners.

1 Text 1 What is another word for 'heat'?	2 Text 3 Why does convection take place in liquid and gases?	3 text 2 How does conduction occur?
4 Text 3 What happens in convection when the liquids or gases are heated?	5 Text 1 What happens to the atoms when a liquid is heated?	6 Text 2 Draw a spectrum to show the best and worst conductors of heat
7 Text 2 What happens when hotter particles collide with cooler particles?	8 Text 3 What form does radiation take when it is emitted from an object?	9 Text 1 What happens to particles when they leave a liquid?
10 Text 2 Why are metals good conductors of heat?	11 Text 1 How do atoms gain energy and motion?	12 Text 3 Which objects emit and absorb radiation best?
Similarities		Differences

Circle the information new to you.

Ejemplos actividades CLIL

Actividad con la que los alumnos pueden poner en práctica la comunicación y expresión en la segunda lengua en el aula.

Your Average Football Match.

A

These football matches are in order of the number of goals scored in each match from lowest to highest. (Liverpool versus Manchester City was the match with the least number of goals).

Can you use the clues to work out the scores in each match.

Team	Score	Team	Score	Number of goals in the match
Liverpool		vs. Manchester City		
Manchester U.		vs. Everton		
Birmingham		vs. Fulham		
Hull		vs. West Ham		
Burnley		vs. Aston Villa		
Sunderland		vs. Arsenal		
Chelsea		vs. Wolves		

The lowest number of goals in a match was 1.

The median number of goals was four fewer than the highest number of goals in a match.

The modal number of goals was two more than the median.

Everton scored one goal in their match.

Sunderland lost their match by three goals.

Chelsea scored twice as many goals as their opponents.

Ejemplos actividades CLIL:

Actividad relacionada con los elementos usados para fabricar un IPHONE

Globalisation: Iphone- The geography of the Iphone 6 elements

What's the human cost of your Iphone?

1 What questions could you have asked Steve Jobs about the components of the Iphone?

2 Work in groups of three. Choose one mineral each.

Mineral	%	Where is it found?	What impact does the mining have?	What are your feelings?
Tin				
Aluminium/ Bauxite				
Cobalt				

Scan your text first and underline any places/countries.

Scan again and find the % of the metal

What would be the best strategy to use to find the key information?

Tin

Tin is used in the Iphone to solder the components together. Much of the tin used in manufacturing and in the Iphone comes from a place called Potosi in Bolivia. Here there is a huge hill called Cerro Rico which was originally used a mine by the Spanish in the 16th century. Then, about 60% of the world's silver came from this mine: since the 17th century, it is estimated that between 4-8 million people have died there from mine collapses, starvation, the cold conditions or mine collapses and disasters.

Today, around 15,000 miners, some of them children as young as 6 years old, work in the mines: they dig for silver, tin, lead and zinc. The average age of death is 39 years old. Many children do not go to school as they have to work in the mine to support their families. The silver and zinc are shipped to Chile by rail and tin is shipped north to Bolivia's state-run tin smelter. From there the tin will be sent for manufacture in Apple products and probably, to make up 2% of your Iphone 6.

Aluminium

The most common element in the Iphone6 is aluminium. This comes from bauxite which is a soft, red rock which is found in tropical, subtropical and volcanic regions around the world. The largest producer of bauxite is Australia, followed by China, Brazil, Indonesia, Guinea, India, Jamaica, Kazakhstan, Russia and Suriname. Apart from Australia, most countries involved in bauxite production very few regulations affecting either working conditions or impact on the environment.

Machines take out the bauxite from 'strip mines' which are very close to the surface of the ground. This process removes all vegetation and therefore the habitats of local birds and animals: it also creates a large amount of toxic waste which then flows into the water supply. In addition, the loss of vegetation creates soil erosion which may lead to land and mudslides. The smelting process often releases greenhouse gases and poisonous fumes which affect the health of the local people particularly the children and elderly. Your Iphone is 30% aluminium.

Cobalt

Most of the cobalt used in the Iphone is in the lithium-ion battery. It comes from the Democratic republic of the Congo. The working conditions for the mines are generally unsafe- the mine shafts often have no wooden supports so they frequently collapse in the rain. Many of the tunnels are dug by hand by children as young as eight years old. Children as young as four often pick cobalt stones from the surface. Exposure to the dust causes many health problems and as the dust flows into the water supply it causes sickness and birth defects in babies. The cobalt is sold to Chinese traders often on the black market. Cobalt is predicted to be in increasing demand with the rise of mobile phone use and electric cars which require a large amount of cobalt to work. Further, the impact on the environment is long term in terms of soil erosion and loss of animal and bird habitats. Cobalt makes up 12% of your Iphone.

BBC video: recycling your old phone. Watch the videos in pairs – one half each (2 mins approx). Complete the chart as you watch.

Information	Details	Details
1 numbers		
2 Back cover		
3 chassis		
4 battery		
5 camera module		
6 Ringer speaker module		
7 Sim card- gold		
8 all metals		
9 main board		
10 LCD unit		

Ejemplos actividades CLIL:

Actividad relacionada con los elementos usados para fabricar un IPHONE

Periodic Table of the Elements

iPhone 6, 16GB model

Element	Chemical Symbol	Percent of iPhone by weight	Grams used in iPhone	Average cost per gram	Value of element in iPhone
Aluminium	Al	24.14	31.14	\$ 0.0018	\$ 0.055
Arsenic	As	0.00	0.01	\$ 0.0022	\$-
Gold	Au	0.01	0.014	\$ 40.00	\$ 0.56
Bismuth	Bi	0.02	10.02	\$ 0.0110	\$ 0.0002
Carbon	C	15.39	19.85	\$ 0.0022	\$-
Calcium	Ca	0.34	0.44	\$ 0.0044	\$ 0.002
Chlorine	Cl	0.01	0.01	\$ 0.0011	\$-
Cobalt	Co	5.11	6.59	\$ 0.0396	\$ 0.261
Chrome	Cr	3.83	4.94	\$ 0.0020	\$ 0.010
Copper	Cu	6.08	7.84	\$ 0.0059	\$ 0.47
Iron	Fe	14.44	18.63	\$ 0.0001	\$ 0.002
Gallium	Ga	0.01	0.01	\$ 0.3304	\$ 0.003
Hydrogen	H	4.28	5.52	\$-	\$-
Potassium	K	0.25	0.33	\$ 0.0003	\$-
Lithium	Li	0.67	0.87	\$ 0.0198	\$ 0.017
Magnesium	Mg	0.51	0.65	\$ 0.0099	\$ 0.006
Manganese	Mn	0.23	0.29	\$ 0.0077	\$ 0.002
Molybdenum	Mo	0.02	0.02	\$ 0.0176	\$ 0.000
Nickel	Ni	2.10	2.72	\$ 0.0099	\$ 0.027
Oxygen	O	14.50	18.71	\$-	\$-
Phosphorus	P	0.03	0.03	\$ 0.0001	\$-
Lead	Pb	0.03	0.04	\$ 0.0020	\$-
Sulfur	S	0.34	0.44	\$ 0.0001	\$-

Globalisation – Science – the Iphone 6

Diana Hicks

More Apple iPhones are sold every day than women give birth to babies.

1 What elements does an Iphone contain?

Work in pairs or threes. Divide the slips equally. Take it in turns to read out your slips and mark the elements on the periodic table. Put the cards with information about the same element together. Did any information surprise you? What didn't you know before?

1 An apple Iphone weighs 129 grams

2 Aluminium and iron make up 38.5% of a Iphone's mass

3 Copper, cobalt, chromium and nickel make up 17.1 percent of the mass of the Iphone

4 Carbon makes up 15.4% of the mass of the Iphone

5 Silicon makes 6.3% of the mass of the Iphone.

6 The Iphone is 24% aluminium

7 Aluminium costs around 2\$ a kilo

8 A quarter of the weight of the Iphone is the case which is made of aluminium

9 Oxygen, hydrogen and carbon are used for different alloys in the metals in the phone

10 The batteries are made of lithium, cobalt and aluminium

11 The Iphone6 contains 0.014g of gold

12 The Iphone contains 0.66g of tin

13 The Iphone contains 0.025g of tantalum

14 The Iphone has .02 % tungsten

GENERAL ENGLISH

1. Group dynamics: we know each other

Find someone who...

	NAME
... reads a book every day.	
... makes his/her bed every morning.	
... likes drawing.	
... has got brown eyes.	
... lives in Málaga.	
... would like to have more friends.	
... goes to bed early every night.	
... likes to play basketball.	

Find someone who

	Name
... has a best friend who they speak to every day	
... gets on well with a sibling	
... had a hangover yesterday morning	
... has friends with whom they only speak English	
... become closer to a family member in recent years	
... would like to have more friends in Dublin	
... didn't go to bed early at the weekend	
... is meeting up with a friend this evening	

... has fallen out with friends on a trip	
... made a lasting relationship while travelling	
... picked up a new word or expression over the weekend	
... reads or watches the news everyday	
... doesn't pay much attention to the news	
... thinks that tourism damages local cultures	
... steers clear of tabloids	
... doesn't trust a lot of the news sources in their country	
... thinks that travel should be part of the secondary school curriculum	
... thinks that the news is often too sensational	



GENERAL ENGLISH

Ejemplos de app útiles para el alumnado:

- **eTabu:** explica la palabra clave a tu equipo sin utilizar los gestos y palabras prohibidas.
- **Preposition builder master:** para mejorar el uso de las preposiciones.
- **Phrasal nerds:** para practicar el uso de Phrasal verbs.

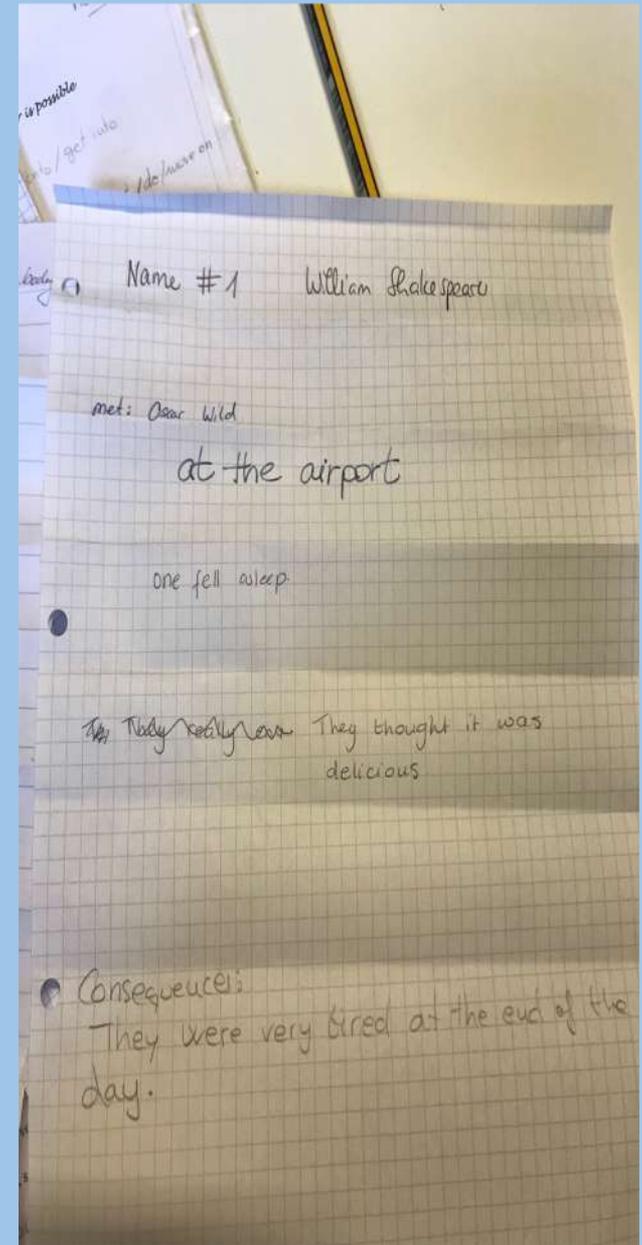
GENERAL ENGLISH

3. Speaking and Writing

Game

- Name: famous
- Met: con quién se encuentra
- A place.
- What happened?
- The reaction.
- Consequences.

Trabajamos en grupo: el primero escribe el nombre de un famoso, dobla el papel y se lo pasa al compañero. Este escribe con quién se encuentra, lo dobla y se lo pasa al siguiente. Así hasta que completan los cinco puntos. Es importante que nadie pueda leer lo que los demás van escribiendo. Al final del juego se lee en voz alta la pequeña historia.



GENERAL ENGLISH

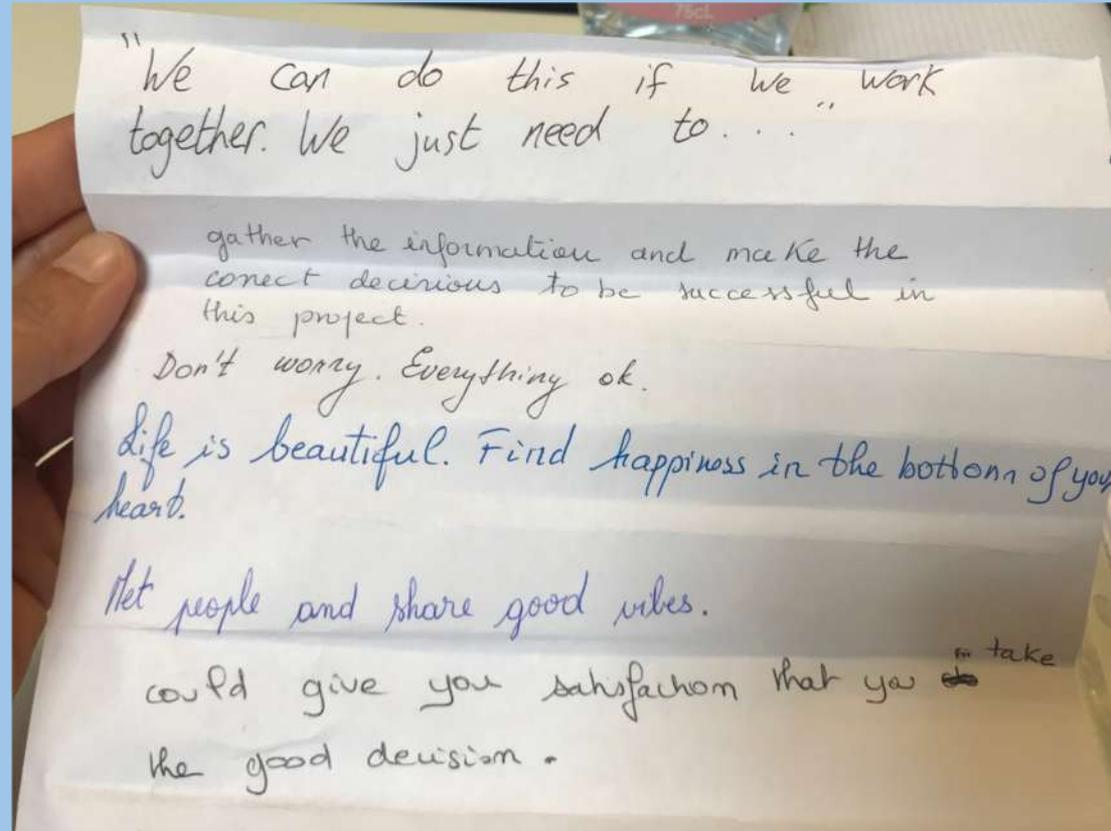
Game: Work in group

Otro juego sería parecido al anterior, pero ahora los alumnos escribirán una historia.

Ej:

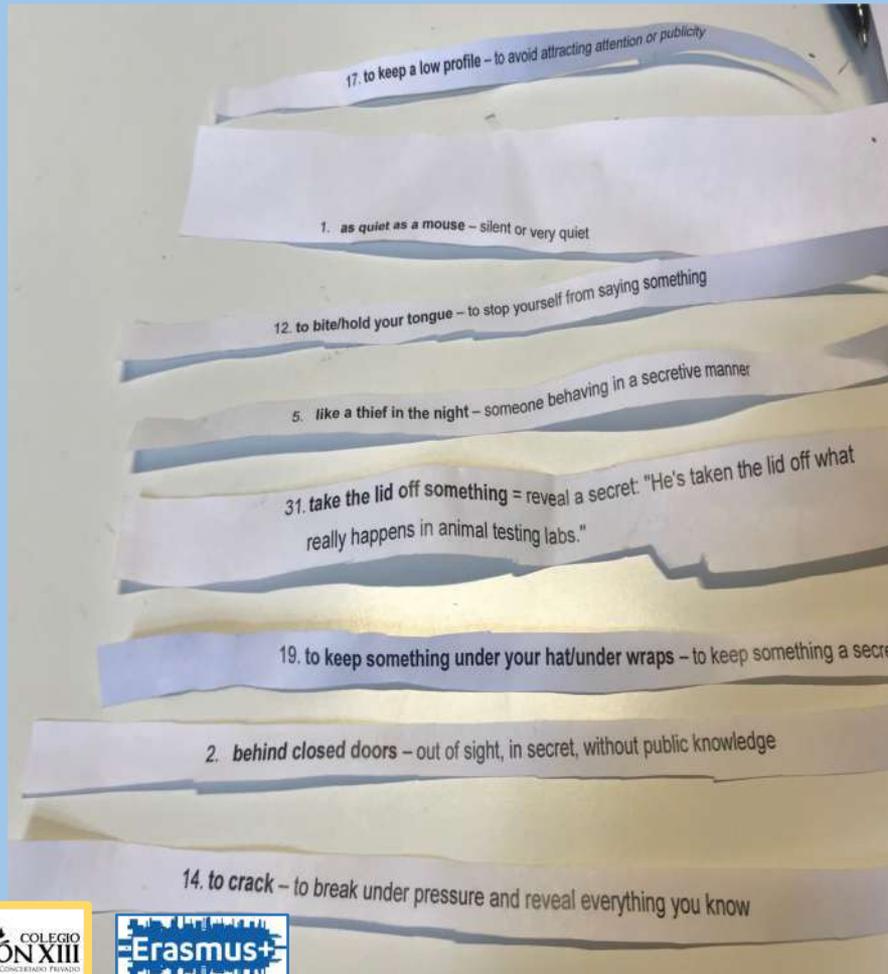
"We can do this if we work together. We just need to..."

El primer alumno continúa la historia, dobla el papel y lo pasa, el siguiente lee solo lo último, escribe, dobla el papel y lo pasa, así hasta que todos los componentes del grupo escriban. Cuando finaliza el juego se lee la historia en voz alta.



GENERAL ENGLISH

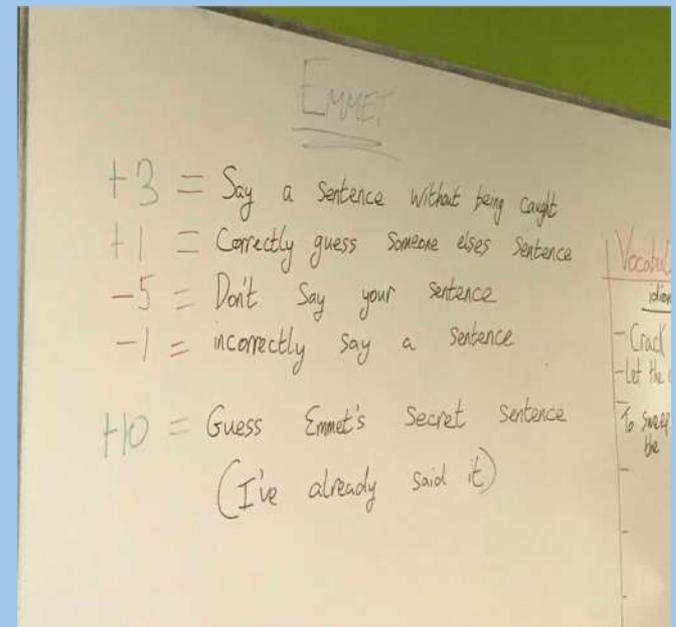
4. Speaking



Game

(Work in group)

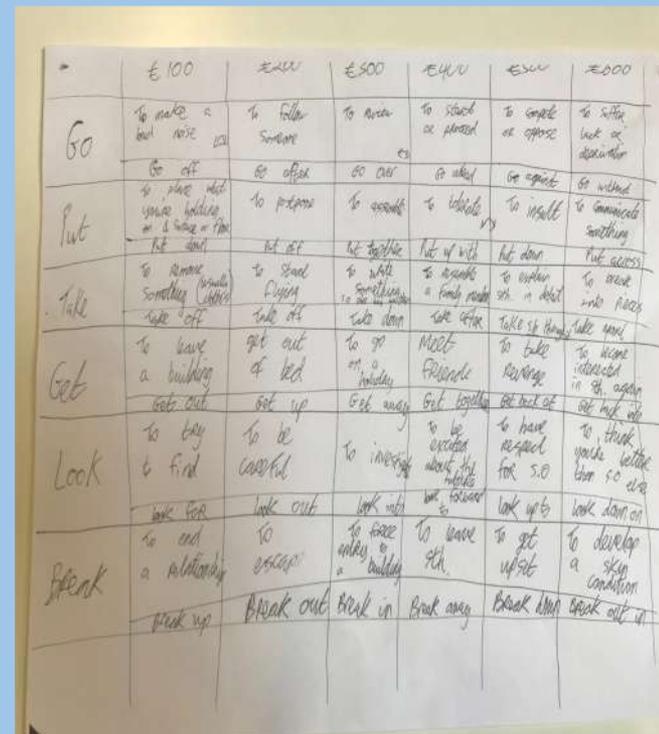
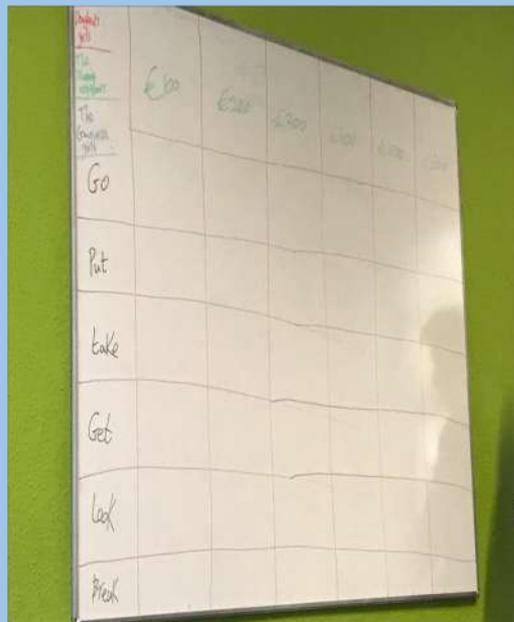
Cada miembro del grupo tiene una frase que debe introducir en la conversación del grupo.



GENERAL ENGLISH

Game to work the Phrasals verbs:

Se elige una casilla y el profesor lee la definición, el equipo debe adivinar la preposición.



ANIMALS

Which animal am I?

	2 points	6 points	8 points	10 points
1				
2				
3				
4				
5				

2 points:

- I'm a mammal. I live on land. I'm carnivore. I'm a wild animal. People call me "the King of Jungle". (Lion)

6 points:

- I'm a vertebrate animal. I'm oviparous. I'm a carnivore animal. I'm long and I can't walk because I haven't got legs. (Snake)

8 points:

- I'm an invertebrate animal. I'm an insect. I'm black and yellow. I have got four wings, two on each side. I have got six legs. (Bee)

10 points:

- I'm a vertebrate animal. I've got fins. I breathe through gills. I lay eggs. I'm a freshwater fish. I'm a carnivore animal. (Trout)