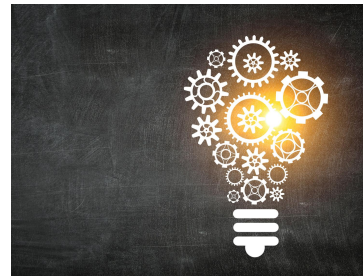


# ENERGY

GEP1: 2021-22



**Escola Pia Igualada**  
Laia Salgado and Mario Sánchez

<b>FINAL TASK 2 : READING &amp; WRITING AND ASSESSMENT IN CLIL</b>	
<b>TITLE OF THE LESSON OR TOPIC</b>	<b>Energy</b>
<b>AUTHORSHIP</b>	<b>Mario Sánchez and Laia Salgado</b>
<b>SCHOOL</b>	<b>Escola Pia Igualada</b>
<b>COURSE / YEAR / GRADE</b>	<b>2n ESO</b>
<b>TIMING</b>	<b>2 Sessions</b>
<b>COLLABORATION WITH...</b>	<b>Gemma Boncompte, Natàlia Lorente, Mario Sánchez and Laia Salgado</b>
<b>OBJECTIVES OF THE SESSION</b>	<b>Describe below</b>



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<b>SHORT DESCRIPTION OF THE SESSION</b>	<p><i>The descriptions of the activities below should contain:</i></p> <ol style="list-style-type: none"> <li>1. <i>collaborative and cooperative activities instructions (including the timing and the language support)</i></li> <li>2. <i>type of support,</i></li> <li>3. <i>readings and writings planned,</i></li> <li>4. <i>assessment tools</i></li> <li>5. <i>materials used</i></li> </ol>
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<b>G E N E R A L</b>	<b>Goal:</b>	<p>To develop knowledge in relation to the overall meaning of the text.</p> <p>To model good reading strategies.</p> <p>To use the text as a basis for specific language study.</p>
	<b>Objectives:</b>	<p>To familiarize students with renewable energies.</p>



	<b>Learning Outcome:</b>	Students will learn the advantages and disadvantages of a renewal energy.
S E S S I O N  1	<b>Activity 1</b>	<p><b>Before-Reading</b>  <i>Goal: To activate prior knowledge about the topic / To make predictions about the topic</i>                      Predict from a visual and predict the main ideas.                      To start the reading activity                      This activity consists in a prediction about the text before reading. The teacher is going to give to students the activity sheet which includes all this session together. (3 activities + complementary activity-see below).                      First, she/he is going to ask the whole class the questions that appear in exercise 1. The technique that is going to be used is the 3'stop. The teacher has to leave three minutes after reading the questions to give time to students to think. Later, the teacher will ask some of them what they think that the text is going to be about.                      Once they predict all together they will go ahead with the reading.                      Also, down the image they have some words in order to help them to interact.  <i>Annex.1 - Session 1 Activity 1- Before reading</i></p>
	<b>Activity 2</b>	<p><b>During-Reading</b>  <i>Goal: To help learners read more effectively and engage readers with the text.</i>                      In this activity, we are going to use the Jigsaw reading technique that helps to break up longer texts into smaller chunks of text (one-two paragraphs where each paragraph contains the main ideas) that students work together in groups to become experts on one topic. The teacher is going to tell the students the topic that they will be reading about and encourage them to make predictions about what they will read.                      Before going to the technique all the class together is going to read the text. While students are reading the teacher can</p>



	<p>stop them and do something like a pause and predict. Also they can review vocabulary at that moment and write on the blackboard the new vocabulary words for them.</p> <p>Later, the group is going to divide into small groups, each one for different sections.</p> <p>The teacher has to explain that each group will be responsible for reading one section of the text and answering the reading comprehension questions that pertain to their assigned section. This activity just helps them to see if they understand the text and organize the information to explain to the others.</p> <p>We will divide the text into three parts. (introduction, advantages and disadvantages).</p> <p>Once they finish they go to their original groups and share the answers and the findings with the others.</p> <p>(We work in groups of three all the time- This is the way we work with SUMMEM in our school)</p> <p>At the end of the activity, all of the students will have learned the answers to all of the comprehension questions from the other students in their group.</p> <p><i>Annex.1 - Session 1 Activity 2- Jigsaw</i></p>
<p><b>Activity 3</b></p>	<p><b>After-Reading</b></p> <p><i>Goal: To focus deeply on the information given in the text.</i></p> <p>To finish with the reading activity the teacher is going to do a multiple choice as an <b>assessment tool</b>.</p> <p>Also to keep going with the RES topic, the teacher is going to write some complementary activities that they can try to answer in their small groups. (Always connected with the topic RES)</p> <p><i>Annex.1 - Session 1 Activity 3</i></p>



	<b>Objectives:</b>	To guide students through the process of writing. To practice COL in context. To write collaboratively.
<b>S E S S I O N  2</b>	<b>Activity 1</b>	<p><b>Storyboard</b>  <i>Timing: 20 minutes</i>  <i>Group: all the class</i>  <i>Type of input: Content input (Listening) Language input (Visual)</i>  <i>Questions:</i>  <i>Activity: Collaborative</i>  <i>Material: comic and the story</i></p> <p>The teacher is going to show a comic sequence while he/she explains some content throughout a story. The comic will help them to make the text more comprehensible. Before doing this activity the teacher has to prepare the storyboard in advance and feel confident with the content he/she is going to teach.</p> <p><b>Interaction</b>  The interaction between student and teacher is very important to strengthen the knowledge. For that reason while the teacher is explaining he/she is going to ask students to retell some part of the story. Moreover, the teacher can make some mistakes to check understanding. (The teacher is going to read the story 3 times while he/she is going to do interaction with students).</p> <p>Once the interaction is over the students are ready to write the story.  <i>Annex.2- Session 2 Activity 1</i></p>
	<b>Activity 2</b>	<p><b>Writing</b>  <i>Timing: 20 minutes</i>  <i>Group:</i></p>



*Type of input: Content input (Writing) Language input (Realia)*

*Questions:*

*Activity: Collaborative*

*Material: Sheet of paper*

It is time to write. The teacher gives a white paper to students and ask them first, to write a title “ENERGY” and later, to start writing the history that he/she explained before about energy . Then he/she is going to walk around the class and will supervise and help all the groups. At that moment the feedback between student-teachers. For this activity we use the “pencil in the middle technique” This consists of one white paper and one pen in the middle of the group. When one member of the group wants to write he/she picks up the paper and writes with the pen. Once he/she finishes, they have to put everything back.

In this activity the teacher is going to project on the blackboard some language support to motivate the interaction and the use of the language with students. Also, the teacher is going to put on the blackboard some discursive connectors in order to help students.

This technique is very useful for knowledge building in which students interact with each other to review contents they have learned before.

When all the groups finish they can read ther histories in front of the class.

### **Assessment Tool**

The teacher is going to assess the student’s work in content and also in language.

In this activity the text has to be structured. Also they need to use sequencing linkers and reflect the information on the energy history. For the assessment of this part the teacher is going to use an EE rubric.

*Annex.3- Session 2 Activity 1*

The objective is to present the history of energy. They have to explain in front of the class and the assessment criteria is the main events that occur in the past to archive energy in our present. They have to use discursive connectors correctly.

*Annex.3- Session 2 Activity 2*



<p>In terms of academic content, what are the students learning and what are they learning to do?</p>	<p>In terms of academic content, we allocate the sessions inside the dimension of natural science in the curriculum. With these sessions we want the students to learn how energy was discovered and the use that we can do. We want them to be conscientious of what energy is and all the advantages and disadvantages that renewable energies have. Also, with this it is important to keep working in the next sessions with the types of renewable energies.</p>
<p>In terms of language, what are the students practicing or learning to do?</p>	<p>During these sessions students are practicing various grammatical constructions; present, past and future, as well as specific vocabulary related to energy and sources. They are also learning to put into practice the theoretical part of what they have been learning up to this point.</p>
<p>In what way is this lesson plan a good example of what we learnt in the GEP course modules?</p>	<p>First of all, this lesson plan includes collaborative and cooperative structures. Moreover, we combine lots of inputs such as content and language ones, trying to include all of them into the lesson plan. We are realistic with the multi intelligences that exist in one class and we would like to be able to reach all of them. In this task we work deeply with writing and reading competences. Secondly, we use the jigsaw technique in the reading activity. And pencil in the middle with the writing activity. Lastly, we combine the language with environmental knowledge (science).</p>
<p>Other important information</p>	<p>This task is going to be implemented at the beginning of the “itinerari”. Then the other teachers are going to continue with the topic of energy where they are going to explain all the types of renewable energies. So this is the introduction to the topic ENERGY.</p>

ANNEXES (materials, handouts, pictures, worksheets, language support, etc.)



Template adapted from CLIL-SI 2015. More information at: <http://grupsderecerca.uab.cat/clisi/>





## SELF ASSESSMENT CHECKLIST

### Task 2 : Reading, writing in CLIL and Assessment

YES/NO

1. **Support** is provided to help students read and understand texts.

Yes



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2. <b>Before-, during- and after-</b> reading activities are prepared.	Yes
3. The materials use <b>visuals</b> to support comprehension.	Yes
4. The writing process takes place in <b>joint collaboration</b> with the teacher (modelling)	Yes
5. <b>Support</b> is provided to help students write (the students are provided with language patterns, language frames, vocabulary banks...)	No
6. The teacher uses different strategies to help students <b>throughout the process</b> of reading and writing	Yes
7. The teacher has <b>previously predicted the language</b> the students will need when carrying out the different tasks successfully and, therefore, is aware of the <b>content-obligatory language</b> .	Yes
8. At least 1 <b>type of assessment</b> is included (self-assessment, teacher assessment or co-assessment)	Yes
9. At least 1 type of <b>assessment tool</b> is used during the sessions (rubric, digital app, checklist, personal dossier...)	Yes



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**ANNEX 1**

**Session 1 Activity 1**

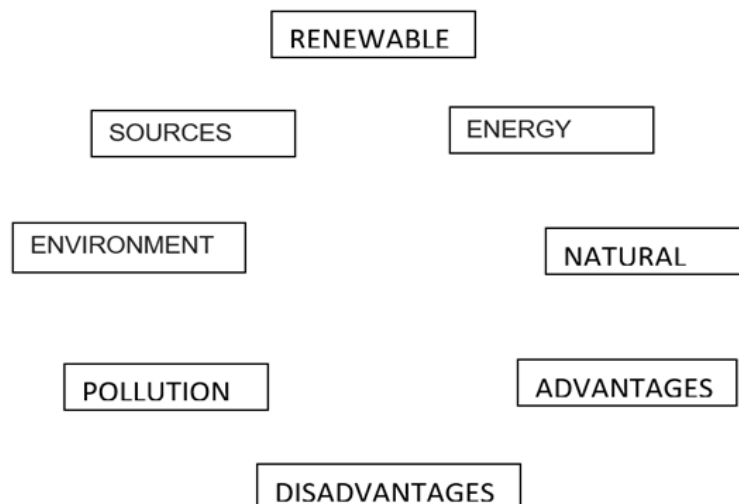
***BEFORE-READING***

**What kind of text do you think you will read? Looking at the picture and the symbols that appear can you give any idea what the text will be about? Have you heard about renewable energy and how can we achieve it?**

**Renewable Energy**



**Renewable Energy – Power from the Environment**



***DURING-READING***

**Session 1 Activity 2**

**Renewable Energy – Power from the Environment- Introduction**

Renewable Energy Sources (RES) are defined as energy sources that are abundant in the natural environment. It is the first form of energy used by man before he turned firmly to fossil fuels. RES are practically inexhaustible; their use does not pollute the environment while their utilization is limited only by developing reliable and economically acceptable technologies that will commit their potential. The interest in developing these technologies first appeared after the first oil crisis of 1974 and consolidated after realizing the world's environmental severe problems in the last decade.



For many countries, RES is a domestic energy source with favorable prospects for contributing to their energy balance, reducing dependence on expensive imported oil, and enhancing the security of their energy supply. Moreover, there is a positive impact on the quality of the environment. It has now been established that the energy sector is the area that is primarily responsible for environmental pollution.

The top 9 countries that produce more than 20% of their electricity from renewable energy sources are Denmark, Uruguay, Ireland, Germany, Portugal, Spain, Greece, United Kingdom, Honduras.

Overall, renewables provide more than a quarter (26%) of global electricity generation, but more decisive policies in all end-use sectors are needed to make energy systems sustainable.

It is characteristic that the only possible way for the European Union to meet the ambitious goal set at the Rio Conference on Environment and Development in 1992 was to eliminate carbon dioxide emissions up to 2000.



### The main advantages of Renewable Energy Sources :



-They are practically inexhaustible energy sources and help reduce dependence on conventional energy resources, depleted over time.

-They are domestic energy sources and contribute to strengthening energy independence and energy supply security at the national level.

-They are geographically scattered and direct to the decentralization of the energy system. Thus, you enable the energy needs to be met at the local and regional level, relieving the infrastructure

systems while at the same time reducing the energy transmission losses.

-They enable selecting the appropriate form of energy adapted to the user (e.g., solar power for low-temperature heat to wind energy for electricity generation), achieving a more rational use of energy resources.

-They usually have low operating costs, which are not affected by fluctuations in the international economy and, in particular, conventional fuels' prices.

RES investments are labor-intensive, generating numerous jobs, particularly at the local level.

-In many cases, they can be the nucleus for the regeneration of economically and socially degraded areas and a pole for local development by promoting investments based on RES's contribution (e.g., greenhouse crops with geothermal energy).

-They are environmentally, and the public generally accepts human friendly and their utilization.

**Disadvantages -Difficulties of Renewable Energy Sources :**

- Their scattered potential is difficult to concentrate in large quantities of power to be transported and stored.
- They have low power and energy density, and therefore extensive production often requires extensive installations.
- They often have fluctuations in their availability that can be long-lasting, requiring the backup of other energy sources or generally expensive storage methods.
- Their low availability usually leads to a low utilization rate of their facilities.
- The investment cost per unit of installed power compared to current prices of conventional fuels remains high.



*Written by: Green Info Technology*

**JIGSAW TECHNIQUE**

**Session 1 Activity 2**

**Following the cooperative structure Jigsaw Technique, write everything you know and read about the questions below. Afeter, you will share it with the rest of your group.**

<u>Introduction</u>	
<b>What is the meaning of RES?</b>	
<b>When did the interest in renewable energies appear?</b>	



How are these energies?	
How many countries consider RES in domestic use?	
Are the policies applied to RES sufficient?	
<b>Advantages</b>	
How are renewable energies?	
What advantage do renewable energies have for users?	
What advantage exists over the area where there is RES?	
<b>Disadvantages</b>	
What is the main disadvantage of renewable energies?	
How is the investment cost?	
Can RES be stored and transported?	

***AFTER-READING***

**Session 1 Activity 3**

**Multiple Choice**

**1- The top 9 countries that produce more than 20% of their electricity from renewable energy sources are:**

- a) Denmark, Ukruguy, Ireland, Germany, Portugal, Spain, Greece, Russia, China.
- b) Denmark, Saudi Arabia, Ireland, Germany, Portugal, Spain, Greece, United Kingdom, United States.
- c) Denmark, Uruguay, Ireland, Germany, Portugal, Spain, Greece, United Kingdom, Honduras.





**2-Which of these statements is a disadvantage of Renewable Energy Sources?**

- a) They are domestic energy sources.
- b) They are environmentally friendly.
- c) Extensive production often requires extensive installations.

**3-What is the meaning of RES?**

- a) Renewable Energy Sources
- b) Renewable Environmental Sources
- c) Rest Energy Sources

**4-Which of these statements is not an advantage of Renewable Energy Sources?**

- a) They are practically inexhaustible energy sources
- b) The investment cost per unit of installed power is high.
- c) They help to reduce dependence on conventional energy resources.

**Complementary activities**

Once you finish the reading activity you can have a discussion with your little group. Talk about the following questions.

- Have you ever seen any renewable energy structure?
- Do you know all types of renewable energies?
- Do you think that if all the energy came from renewable energies, the pollution should decrease?



In the history of mankind, three important events have completely changed how we live. The first was the discovery of fire and how to manipulate it. This helped humans to warm themselves in winter, it provided protection against animals, and it changed their diet.

The second change occurred around 1750: we call it the Industrial Revolution. The most significant discovery was how to transform steam into motion. This is linked to the use of machinery, different types of transport and industry.

The third transformation came at the end of the 19th century with the discovery of electricity. It radically transformed people's lives and provided homes with different types of energy: heat, motion, light and sound.

Fire, steam and electricity are three manifestations of energy, the main concept of this unit. Energy is one of the key ideas in the history of science and mankind. Humans need abundant and safe energy sources. It is also important that these energy sources do not endanger the future of our planet. Nowadays there is lots of research into new sources of energy. Renewable energy sources are slowly replacing fossil fuels such as oil and coal. There is also research into using the same energy as the stars use: nuclear fusion.

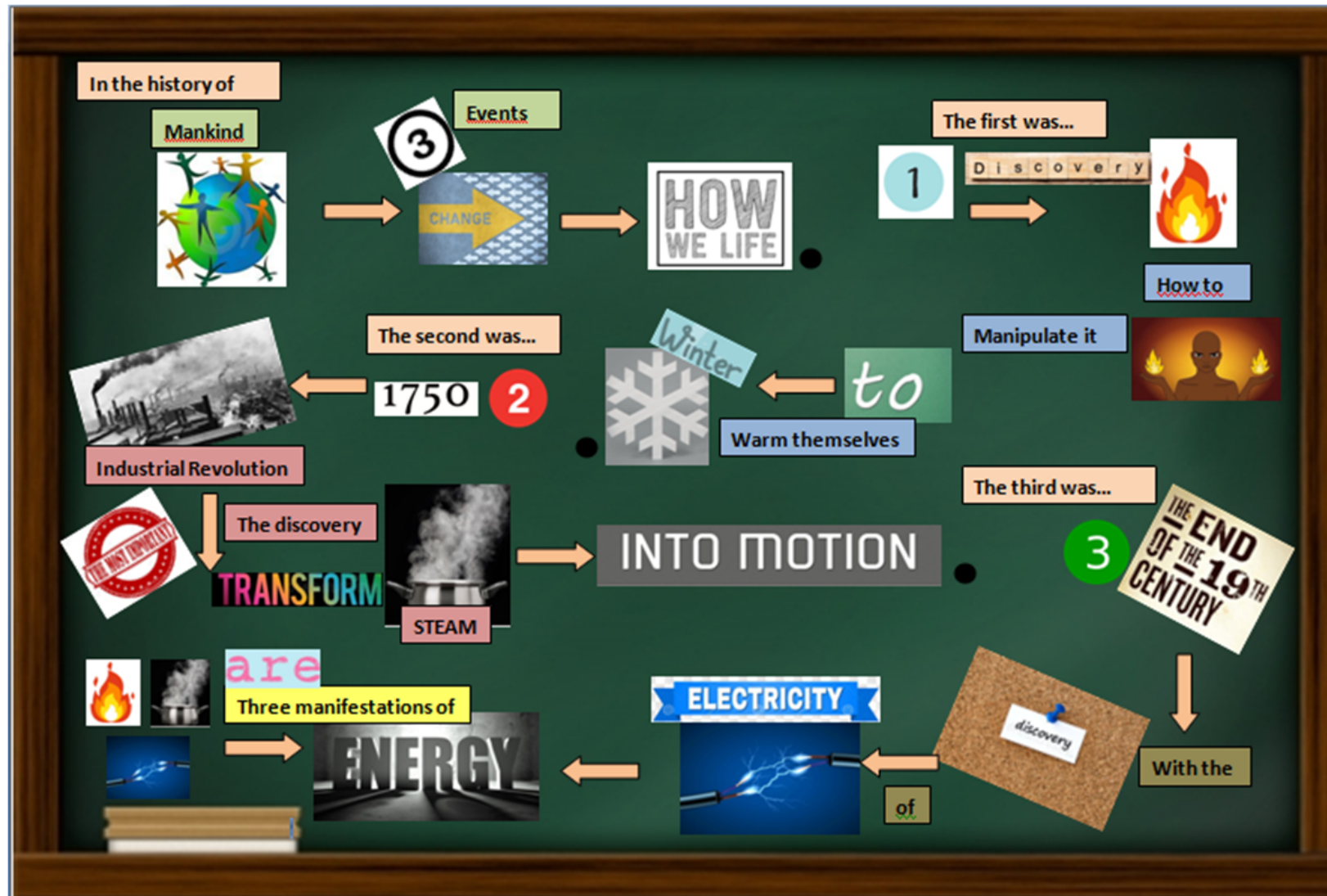
'Humanity stands before a great problem of finding new raw materials and new sources of energy that shall never become exhausted. In the meantime we must not waste what we have, but must leave as much as possible for coming generations.'

Svante Arrhenius, Nobel Prize for Chemistry

Reading 2. Energy. Physics and Chemistry. Secondary 2. Mc Graw Hill Education. Smartbook

ANNEX 2

Session 2 Activity 1- STORYBOARD



Template adapted from CLIL-SI 2015. More information at: <http://grupsderecerca.uab.cat/clilsi/>





Template adapted from CLIL-SI 2015. More information at: <http://grupsderecerca.uab.cat/clilsi/>



**Session 2 Activity 1- WRITE THE ENERGY HISTORY**

Following the cooperative structure “Pencil in the middle”, try to rewrite the history of energy. Remember that all the members of the group have to participate during the activity.

**ENERGY**





**Session 2 Activity 1- Rubric**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Mark</b>
<b><u>Content</u></b>	Does not seem to understand the topic very well.	Shows a good understanding of parts of the topic.	Shows a good understanding of the topic.	Shows a full understanding of the topic.	
<b><u>Vocabulary</u></b>	Use of vocabulary which is not appropriate for the purpose.	Use of vocabulary which is not very appropriate for the purpose.	Use of quite appropriate vocabulary for the purpose.	Use of appropriate vocabulary for the purpose.	
<b><u>Use complete sentences</u></b>	Rarely speaks in complete sentences.	Sometimes speaks in complete sentences.	Mostly use complete sentences to speak.	Always use complete sentences to speak.	



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**UAB**  
Universitat Autònoma  
de Barcelona  
Facultat de Ciències de l'Educació

 Generalitat de Catalunya  
Departament d'Educació  
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i Personalització



**ANNEX 3**

**Session 2 Activity 2- LANGUAGE SUPPORT**

<p><b>LANGUAGE SUPPORT</b></p>	<p><b>CONNECTORS</b></p>
<p>We can start the text with</p> <p>To start</p> <p>To finish</p> <p>To conclude</p> <p>The first one</p> <p>The second</p> <p>The last</p>	<p>Which means that</p> <p>Which refers to</p> <p>Moreover</p> <p>After</p> <p>Such as</p> <p>However</p> <p>At last</p>
<p>I am not sure</p> <p>How do you say this in English?</p> <p>How do you spell it?</p> <p>What if you say</p> <p>I don't know</p> <p>Maybe we can</p> <p>That is fantastic</p> <p>I like your idea</p>	<p>Because</p> <p>On the other hand</p> <p>But</p> <p>For example</p> <p>Furthermore</p> <p>Instead of</p>

<p><b>ADDING</b></p> <p>and as well as moreover furthermore in addition too on top of that another point is</p>	<p><b>SEQUENCING</b></p> <p>first, firstly, first of all second, secondly.. third next meanwhile now subsequently</p>	<p><b>ILLUSTRATING</b></p> <p>for example such as for instance in the case of as shown by illustrated by take... one example is..</p>
<p><b>COMPARING</b></p> <p>similarly likewise as with like equally in the same way</p>	<p><b>QUALIFYING</b></p> <p>but however although unless except apart from as long as if</p>	<p><b>CONTRASTING</b></p> <p>whereas alternatively unlike on the other hand conversely having said that nevertheless however</p>
<p><b>CAUSE AND EFFECT</b></p> <p>because because of as a result of consequently therefore thus owing to due to</p>	<p><b>SUMMARY</b></p> <p>in short on the whole in other words on the whole overall generally in general in brief</p>	<p><b>EMPHASIZING</b></p> <p>above all in particular especially significantly indeed notably</p>