



**El Gigant del Rec School**  
**Ingrid de la Barrera Pujol**

**Generació Plurilingüe (GEP)**

Year 2



# PROJECT PLANNING TEMPLATE for CLIL and Content-Rich Environments

## Identification of the GEP project:

Title	"The secrets of The Periodic Table of Elements: Leonardo da Vinci"
Authorship	Ingrid de la Barrera
School	El Gegant del Rec
Students' CEFR Level (A1, A2...)	-
Grade	Primary 6
Content area(s)	Arts & Crafts
Number of sessions (4, 6 or 9)	4 sessions
Teacher(s) involved	Magalí Masó - "The secrets of The Periodic Table of Elements: Bioluminescence" (3 <sup>rd</sup> Grade). Davinia Díaz - "The secrets of The Periodic Table of Elements: Prehistory" (4 <sup>th</sup> Grade). Ingrid de la Barrera - "The secrets of The Periodic Table of Elements: Leonardo da Vinci" (6 <sup>th</sup> Grade).
Key words	Inventions, artist, chemical elements, creations, historical facts

## 1. OUR PROJECT

### Introduction:

To introduce this project, there is a video where the pupils can see an actor interpreting Leonardo da Vinci and he will say:

*"Buon Giorno! Hello pupils of Primary 6 from Escola El Gegant del Rec. My name is Leonardo da Vinci because I was born in Vinci, Italy, near Florence, in 1452. I am one of the world's best-known artist. I painted Mona Lisa, the world's most famous painting, and other very famous works of art. But I was also one of the most amazing and creative inventors ever to live. I wrote hundreds of notebooks with ideas for inventions; for example, flying machines (like a helicopter and a parachute), war inventions (like armored tanks and a safety bridge), water inventions (like walk-on-water shoes) and art paintings (like the Mona Lisa and the Last Supper). Do you want to discover my life, my ideas and my inventions? Ingrid will introduce you my story through this marvellous book titled *Leonardo Da Vinci (Meet the Artist)*! Here you are! And, before I go... I want to ask you for a favour... I know you school project of this year is about the Periodic Table of Elements and I am not an expert of it. Can you help me to discover how chemical elements of the periodic table helped me? Thank you very much! I would love to see your creations at the end of the project! Ciao"*

After the video, the teacher will tell the story of Leonardo da Vinci through the book mentioned before.

As an enclosure of the project, there will be the same actor congratulating the students for their work by saying:

*"Buon Giorno! Hello again! I am so happy and excited to see your work! Thank you very much to help me to discover how chemical elements of the periodic table helped me! Congratulations for your projects! I hope you have enjoyed doing this project about me and you have learned many interesting things! And, as I said: **"All our knowledge has its origins in our perceptions"**.Ciao"*

**Driving question:** *How did the chemical elements of the periodic table help Leonardo da Vinci?*

**Final product:** A power point in Google Classroom and a craft of one Leonardo's creation.

2. GOALS	2. HOW DO YOU KNOW STUDENTS ARE MAKING PROGRESS? (assessment criteria)
1. Discover the creations of Leonardo da Vinci.	1.1. Students can name the discoveries and some of their uses. 1.2. Students can build themselves an invention of Leonardo da Vinci.
2. Relate the chemical elements to some artistic creations.	2.1. Students can label some parts of the creations and the chemical elements used. 2.2. Students are aware of why some chemical elements are important.
3. Create a presentation in Google Classroom.	3.1. Students can share information (It has got... It can...) 3.2. Students can give an opinion of their project and the others projects.

### 3. CURRICULUM CONNECTIONS SPECIFIC COMPETENCES AND KEY CONTENTS

Subject-matter curriculum		Foreign language curriculum	
Specific Competences	Key Contents	Specific Competences	Key Contents
<b>Perception, understanding and valuation:</b>		<b>Oral Communication:</b>	
Use basic elements of visual, body and musical languages and strategies to understand and appreciate artistic productions.	Properties of materials, colors, shapes (volumes, lines, contours, textures, sizes and perspectives ...) in the images, objects and artistic works.	Plan and produce short and simple oral texts appropriate to the communicative situation.	Identification of the lexical and basic expressions of a specific topic.
Understand and value significant elements of the artistic heritage nearby, of Catalonia and everywhere.	Recognition of ways of living, of forms of social organization and of attributions of time and place in the images and the objects.	Use oral interaction strategies in accordance with the communicative situation to start, keep and finish the speech.	Use of the structures typical of the foreign language in oral productions.
	Features (formal, material and technological) in the creation of objects and images that have changed or are maintained over time.		Production of messages of social exchange in the classroom and related to thematic content: questions, answers, instructions for work ...

			Individual or group oral presentation of topics worked and using visual and digital media.
			Interest and effort to understand oral productions in the classroom.
<b>Interpretation and production:</b>		<b>Reading Comprehension:</b>	
Use basic elements of visual language with artistic techniques and tools to express themselves and communicate.	Construction and characterization of characters, recreation of imagined spaces, creation of structures, models, decorations and exhibitions.	Apply strategies to obtain basic information and understand written texts simple or adapted from everyday life, the media and the school environment.	Read different types of texts, in paper and digital format, to capture the general sense and extract specific information.
	Interest, appreciation and respect for the artistic fact and for their own and other artistic productions.	Use query tools to gain access to the comprehension of texts.	Use of digital tools for guided search of information in the execution of specific tasks.
<b>Imagination and creativity:</b>		<b>Writing:</b>	
Design and realize multidisciplinary artistic projects and productions	Creativity and imagination in artistic expression and communication.	Produir textos senzills amb adequació a la situació comunicativa i amb l'ajut de suports.	Use of safe and age-appropriate digital communication systems to establish communication channels in the foreign language and for the

			presentation, editing and publication of texts.
		<b>Literary education:</b>	
		Understand and value simple, adapted or authentic literary texts, appropriate at age.	Respect for the productions of others.
		<b>Multilingualism and interculturality:</b>	
		Use multilingual strategies for communication.	Perception of difficulties in multilingual communication and application of verbal and non-verbal strategies to solve situations and adapt to the speaker in multilingual contexts.

#### 4. 21<sup>st</sup> CENTURY COMPETENCES

Collaboration	<b>x</b>	Information, media and technology	<b>x</b>
Communication	<b>x</b>	Leadership & Responsibility	<b>x</b>
Problem Solving	<b>x</b>	Initiative & Self-direction	<b>x</b>
Creative Thinking	<b>x</b>	Social & Cross-cultural	
Others:			

#### 5. KEY COMPETENCES

Communicative, linguistic and audiovisual competence	<b>x</b>	Digital competence	<b>x</b>
Mathematical competence		Social and civic competence	
Interaction with the physical world competence		Learning to learn competence	<b>x</b>



Cultural & artistic competence	<b>x</b>	Personal initiative and entrepreneurship competence	<b>x</b>
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## 6. CONTENT (Knowledge and Skills)

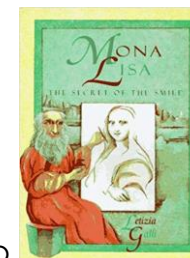
CONTENT-RELATED KNOWLEDGE	CONTENT-RELATED SKILLS
<p>The content-related knowledge we are going to work is:</p> <ul style="list-style-type: none"> <li>- Leonardo the artist and dreamer (paintings used and perspective)</li> <li>- Leonardo's Vitruvian Man</li> <li>- Leonardo in Flight (Parachute)</li> <li>- Leonardo's War Inventions (safety bridge)</li> <li>- Leonardo and Water (Walk-on-water shoes or webbed gloves)</li> </ul> <p>Moreover, we have a content-related knowledge in Common with primary 3 and 4, which are the elements from periodic table used on our projects.</p>	<p>The content-related skills help students learn through critical thinking, creative thinking, communicating and collaborating. To be more specific, in this project we are going to focus our attention to the following learning skills:</p> <ul style="list-style-type: none"> <li>- The group is able analyze the situation and clearly state an achievable objective.</li> <li>- Team building and cooperatively working to achieve the goal.</li> <li>- Explaining and defining how an invention works.</li> <li>- Building inventions.</li> <li>- Listening actively to a story and to the classmates.</li> <li>- Using technology to work, concretely Kahoot and Google Classroom.</li> <li>- Sharing information, exemplifying, relating facts and ideas, coming to agreements about the project.</li> <li>- Evaluating the process.</li> </ul>

## 7. REFERENCES

Anderson, Maxine. *Amazing Leonardo da Vinci Inventions*. 2006 by Noman Press.



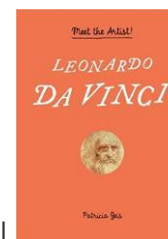
Galli, Letizia. *Mona Lisa, the secret of the smile*. 1996 by Bantam Doubleday Dell Publishing Group.



Edwards, Roberta. *Who was Leonardo da Vinci*. 2005 by Penguin Random House.



Geis, Patricia. *Leonardo da Vinci. Meet the artist*. 2018 by Princeton Architectural.



Music and paintings of Leonardo da Vinci from this [Youtube page](#).

## 8. COMMENTS (optional)

To understand a bit more about this PBL project about Leonardo da Vinci it's important to take into account two main facts:

- It's part of the Interdisciplinary School Project about the Periodic Table of Elements.
- We are three teachers involved in GEP subjects:

*Magalí Masó - "The secrets of The Periodic Table of Elements: Bioluminescence" (3<sup>rd</sup> Grade).*

*Davinia Díaz - "The secrets of The Periodic Table of Elements: Prehistory" (4<sup>th</sup> Grade).*

*Ingrid de la Barrera - "The secrets of The Periodic Table of Elements: Leonardo da Vinci" (6<sup>th</sup> Grade).*






To work together on this project, the pupils are going to prepare oral presentations in order to expose their discoveries about the secrets of the periodic table to other grades.

I also would like to mention that the group work is heterogeneous, and pupils with Special Needs are going to be helped by other pupils and by the teacher, who will guide their work by giving them extra help.

## 9. ACKNOWLEDGEMENTS (optional)

Thanks to Josep Cortals, who acted as Leonardo da Vinci in the introductory video and in the ending video.

## 10. UNIT OVERVIEW

Session	Activities	Timing 	Skills 	Interaction 	ICT 	Assessment 
1	Introduction (video of an actor who performs Leonardo da Vinci) and show the Driving Question: <b>How did chemical elements of the periodic table help Leonardo da Vinci?</b>	2 min	L	WG	Video	-
	Storytelling - Mona Lisa, the secret of the smile.	5 min	L+S	T-S	-	-
	Kahoot as reading comprehension <a href="https://play.kahoot.it/#/k/b766af8b-6cdd-4d2d-a0b1-ae5d0840074d">https://play.kahoot.it/#/k/b766af8b-6cdd-4d2d-a0b1-ae5d0840074d</a>	13 min	R+S+I	SG	Chromebo oks.	SA
	Leonardo's writing through a mirror to discover the text.	20 min	R+W+ S+L+I	SG	Chromebo oks	TA Goal setting. The group analyzes the situation and clearly states an achievable objective.
	Making groups and choose "who	10 min	S+I	S-S and SG	-	TA

	makes what". Give some images from Leonardo's Notebooks drafts and the pupils have to say what is the draft about and choose if they want to do the project about the invention shown.					Sharing information
	Rubric of session 1	10 min	R+S+I	S-S and WG	-	SA and PA
2	Warm up. Refresh what we did on the last session.	2 min	L+S	WG	-	TA
	Do some research and discuss about the project. Give a worksheet to read about their research and do a reading comprehension.	25 min	L+S+R +W+I	SG and S-S	-	TA Observation and Feedback
	The teacher hands out 4 envelopes per group and one Chromebook. Inside the envelope there is the role written (EDITOR, SECRETARY, CHECKER AND WEBMASTER). EDITOR - Fills in the oral presentation template. SECRETARY - Fills in the guidelines worksheet.	33 min	R+W+I	SG and S-S	Chromebook	TA Team building and cooperatively working

	CHECKER - Organizes the work and checks everything is done properly. WEBMASTER - Has got the Chromebook and prepares the presentation. <b><i>This activity will last at least one more session.</i></b>					
	Rubric session 2 and 3	5 min	S+W+I	S-S and WG	-	SA and PA
3	It's possible that session 2 requires another session to do more research and the preparation of the presentation, therefore, the rubric will be done at the end of both sessions.					
4	Warm up. Refresh what we did on previous sessions and get some feedback.	2 min	S+L	WG	-	TA Feedback
	Hands-on inventions. Give the instructions cut and students have to order them.	15 min	R+S+I	S-S and SG	-	TA Goal setting. They got the whole text.
	Start creating an invention. This activity will last at least one more	38 min	S+L+I	S-S and SG	-	TA Goal setting. The group analyzes the situation and

	session. <i>This activity will last at least one more session.</i>					clearly states an achievable objective.
	Rubric session 4 and 5.	5 min	S+W+I	S-S and WG	-	SA and PA
5	It's possible that session 4 requires another session to finish properly the hands-on building projects to explore Leonardo's inventions, therefore, the rubric will be done at the end of both sessions.					
6	Oral presentation/Audience-presented product	50 min	S+L+R +I	WG and SG	Power Point	PA and TA Sharing information, exemplifying, relating facts and ideas, coming to agreements about the project.
	Rubric session 6	10 min	S+W+ R+I	S-S and WG	-	SA and PA
7	Warm up. Enclosure of the project.	5 min	S+L	WG	-	TA Feedback
	Video of an actor who performs Leonardo da Vinci.	5 min	L+S	WG	Projection	TA Listen actively

	Set the projects at the entrance of the school.	30 min	I	WG	-	AT
	Reflection/Assessment (Google Forms)	20 min	R+W	S-S	Chromebooks	SA and AT



## 11. SESSION PLANNING

### SESSION 1: Who was Leonardo da Vinci?

Objectives of the session:

- To discover some creations of Leonardo da Vinci.
- To listen actively to a story.
- To apply strategies to obtain basic information and understand written texts.
- To build a team and cooperatively work to achieve the goal.

Content-obligatory language for the session:

- *How did chemical elements of the periodic table help Leonardo da Vinci?*
- Italy - Vinci - Florence
- He was born in... He died in...
- Inventions, discoveries, paintings,...

#### Activities

*include : Name and description; Assessment tool (if any); Material (including language support)*



1.1

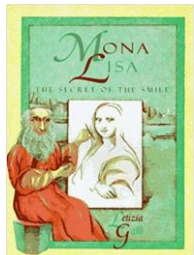
*Name and description:* **Introduction.** Video of an actor who performs Leonardo da Vinci. At the same time the Driving Question is presented.

*Assessment tool:* Check that students are listening actively.

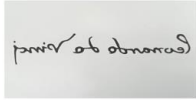
2'



-

	<p><i>Material:</i> Video - S1- Introductory video (the language support are images - <a href="#">S1 introductory video images</a>)</p>					
1.2	<p><i>Name and description:</i> <b>Storytelling “Mona Lisa, the secret of the smile”</b>. The teacher tells the story and interacts with the students.</p> <p><i>Assessment tool:</i> Check that students are listening actively.</p> <p><i>Material:</i> The book - <a href="#">S1 Story Mona Lisa The Secret of the Smile</a>.</p> 	5'	✓	✓	-	✓
1.3	<p><i>Name and description:</i> <b>Kahoot as reading comprehension</b>. Pupils are in groups of 4 and they have to play Kahoot about the story “Mona Lisa, the secret of the smile”.</p> <p><i>Assessment tool:</i> Self-Assessment, according to the answers of Kahoot.</p> <p><i>Material:</i> <a href="https://play.kahoot.it/#/k/b766af8b-6cdd-4d2d-a0b1-ae5d0840074d">https://play.kahoot.it/#/k/b766af8b-6cdd-4d2d-a0b1-ae5d0840074d</a></p> <p>*Click the link to get in the web page.</p>	13'	✓	✓	✓	✓
1.4	<p><i>Name and description:</i> <b>Leonardo’s writing through a mirror to discover the text</b>.</p> <p><i>Assessment tool:</i> Correct the worksheets</p> <p><i>Material:</i> Mirrors</p>	20'	✓	✓	✓	✓

A worksheet (flashcards) with the texts to discover - [S1 Mirror activity](#).



The most famous of all Renaissance men and women is probably Leonardo da Vinci.

He was born in the small town of Vinci in 1452.

When he was fourteen, his father practiced him in a school in Florence. Andrea del Verrocchio in Florence.

In 1482, he moved to Milan to work and there he painted the Last Supper.

After Milan, he went back to Florence and he painted the Mona Lisa.

He had a school and he was a great inventor and discoverer.

He died in 1519.

A worksheet to write the texts discovered - [S1 Revealing Mirror Texts](#)


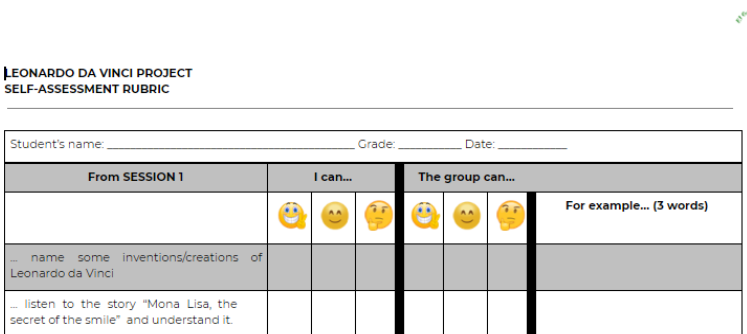
Name \_\_\_\_\_ Date \_\_\_\_\_  
REVEALING MIRROR TEXT

Write down here Leonardo da Vinci's writings about his life that you find out through the mirror.

1.	
2.	
3.	
4.	

Name \_\_\_\_\_ Date \_\_\_\_\_

5.	
6.	
7.	

1.5	<p><i>Name and description:</i> <b>Making groups and choose “who makes what”</b>. Give some images from Leonardo’s Notebooks drafts and the pupils have to say what is the draft about and choose if they want to do the project about the invention shown.</p> <p><i>Assessment tool:</i> -</p> <p><i>Material:</i> <a href="#">Flashcards</a> of the inventions and discoveries used on session one.</p> 	10'	✓	✓	-	-
1.6	<p><i>Name and description:</i> Rubric of session 1</p> <p><i>Assessment tool:</i> Rubric</p> <p><i>Material:</i> <a href="#">Worksheet of the rubric</a></p> 	10'	✓	✓	-	✓

## SESSION 2: What chemical elements helped Leonardo?

Objectives of the session:

- Label some parts of the creations and the chemical elements used.
- Be aware of why some chemical elements are important.

Content-obligatory language for the session:

- Mona Lisa, The Last Supper, parachute, webbed gloves, perspective, safety bridge and Vitruvian Man.
- I am the... editor, secretary, checker and webmaster.
- Specific vocabulary of the reading texts according to the group.

### Activities

*include : Name and description; Assessment tool (if any); Material (including language support)*

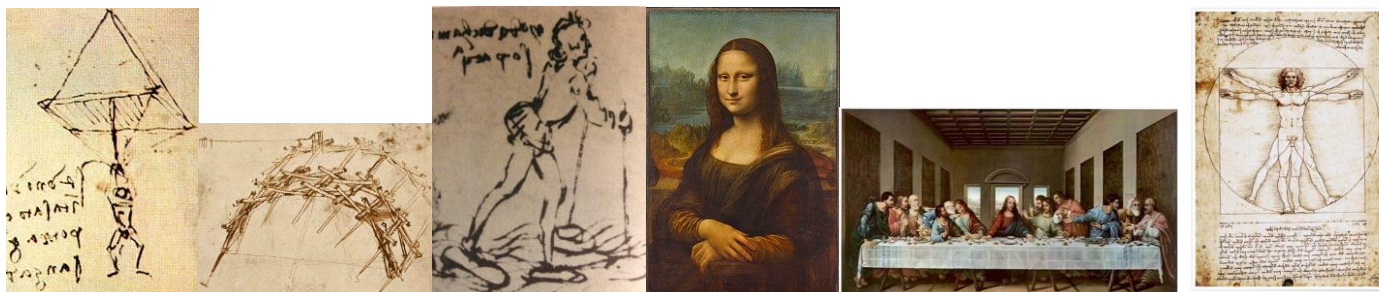


*Name and description:* **Warm up.** Refresh what we did on the last session.

*Assessment tool:* -

*Material:* [Flashcards](#) of the inventions and discoveries used on session one.

2.1



5'



-

-

*Name and description:* Do some research and discuss about the project.

The teacher hands out 4 envelopes per group and one Chromebook. Inside the envelope there is the role written (EDITOR, SECRETARY, CHECKER AND WEBMASTER).

EDITOR - Fills in the oral presentation template.

SECRETARY - Fills in the guidelines worksheet.

CHECKER - Organizes the work and checks everything is done properly.



WEBMASTER - Has got the Chromebook and prepares the presentation.

**This activity will last at least one more session.**

*Assessment tool:*

*Material:* Worksheet of Leonardo the... (each group their worksheet) - [S2 Leonardo the...Worksheet](#)

2.2

<p>Name ..... Date .....</p> <p>LEONARDO THE ARTIST AND THE DREAMER - Mona Lisa</p> <p><b>Read and circle the KEY WORDS of this text:</b></p> <p>Before the photography was invented 170 years ago, the only way to have an image of someone was to paint a portrait of them.</p> <p>Leonardo painted the Mona Lisa in 1503 in Florence. Nowadays, nobody knows who was this woman. This painting is one of Leonardo's greatest achievements.</p>  <p>On that period of time, to paint, the artists needed pigments to give colour. Pigments are obtained from the earth, from plants, from some insects, and from minerals. Black, for example, was made from the <b>soot*</b> of oil lamps, from carbonized grape vines or by burning bones or marble. There was yellow paint made of gold. Ultramarine blue was made with dust of the stone <b>lapis lazuli*</b> and red was derived from the small red cochineal insect.</p> <p><small>*soot = suïja *lapis lazuli = mineral de color blau</small></p> <p><b>Answer the following questions about the text:</b></p> <ul style="list-style-type: none"> <li>Why did artists painted portraits? .....</li> <li>Who was Mona Lisa? .....</li> <li>From what materials did the painters get the colours (pigments)? Black: ..... Yellow: ..... Blue: ..... Red: .....</li> </ul>	<p>Name ..... Date .....</p> <p>LEONARDO THE ARTIST AND THE DREAMER - Perspective</p> <p>• What is the most interesting part of the text? .....</p> <p><i>Discover how the artists of this period of time made the colours (pigments) and what chemical elements they used.</i></p>	<p>Name ..... Date .....</p> <p>LEONARDO THE ARTIST AND THE DREAMER - Perspective</p> <p><b>Read and circle the KEY WORDS of this text:</b></p> <p>One of the most interesting and important changes in art that occur during the Renaissance was the discovery of an idea that made it possible for painters to translate the 3D world they lived in onto the 2D surface of painting. This idea is named "linear perspective" invented by Filippo Brunelleschi.</p>  <p>As a result of Leonardo's observations on perspective, he created a machine for sketching a scene with the proper linear perspective. This machine was named "perspectograph" and it helped the artists design a replica of the scene they wanted to paint in proper perspective.</p> <p><b>Answer the following questions about the text:</b></p> <ul style="list-style-type: none"> <li>Who invented the Linear Perspective? .....</li> <li>What machine invented Leonardo to work the perspective? .....</li> <li>What is the most interesting part of the text? .....</li> </ul> <p><i>Discover how a perspectograph worked and what chemical elements are used.</i></p>	<p>25'</p> <p>✓</p> <p>✓</p> <p>-</p> <p>-</p>
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Name ..... Date .....



LEONARDO AND THE VITRUVIAN MAN

Read and circle the KEY WORDS of this text:



The **Vitruvian Man** is a drawing made by Leonardo da Vinci in about 1490. The drawing is done in pen and **ink** on paper. It is of a male figure standing in two positions, that are superimposed (drawn over the top of each other). The figure's arms and legs are drawn in two different positions, while the rest of the body stays in one position. The figure is drawn standing inside both a circle and a square.

The drawing and text are sometimes called the **Proportions of Man**. The drawing is based on the ideal proportions of a man's body, and how this relates to geometry.

\*ink = tinta

Answer the following questions about the text:

- What is the Vitruvian Man?  
.....
- What materials did Leonardo use to make this drawing?  
.....
- What is the most interesting part of the text?  
.....

Discover how Leonardo did the Vitruvian Man and what chemical elements are used.

Name ..... Date .....



LEONARDO'S WAR INVENTIONS - Safety Bridge

Read and circle the KEY WORDS of this text:



Leonardo invented the self supporting bridge between 1485-1487. It was used as an emergency bridge made by an **army** out of necessity, from plants, which they find at the river banks. This unique design is held together by its own weight without requiring any connections. Da Vinci called it "The Bridge of Safety".

In 1996, a Norwegian artist saw a model of the bridge and convinced the government to build a wooden version of the bridge.

\*army = exercit

Answer the following questions about the text:

- What is a "Safety Bridge"?  
.....
- What materials were used to build it?  
.....
- What is the most interesting part of the text?  
.....

Discover how Leonardo did the "Safety Bridge" and what chemical elements are used.

Name ..... Date .....



LEONARDO IN FLIGHT - Parachute

Read and circle the KEY WORDS of this text:



One of Leonardo's most famous quick sketches is of a tiny stick figure suspended from a parachute. Leonardo's parachute design consists of **linen cloth**\* held open by a pyramid of **wooden poles**\*. He tested his parachute from trees.

But in the year 2000, Adrian Nicholas worked for months on a replica of Leonardo's parachute. He even used canvas and wood. He tried it with an extra parachute in case Leonardo's one was a disaster!

\*linen cloth = roba de llençols

\*wooden poles = pals de fusta

Answer the following questions about the text:

- What materials are used to design this parachute?  
.....
- Who tried to do a replica of this parachute in 2000?  
.....
- What is the most interesting part of the text?  
.....

Discover how Leonardo did this parachute and what chemical elements are used.

Name ..... Date .....



LEONARDO AND THE WATER - Webbed Gloves

Read and circle the KEY WORDS of this text:



Leonardo sketched his ideas for a pair of gloves that would work like **fins**\*. It appears he was mainly thinking about how someone could use them to survive in a tempest. The annotation said "glove with membranes for swimming in the sea".

The gloves were designed to be tied around the wrists and were made of leather with wooden ribs to **stiffen**\* them. They were shaped kind of like a **seabird's** foot (goose, turtle or frogs).

\*fins = aletes

\*stiffen = endureir

Answer the following questions about the text:

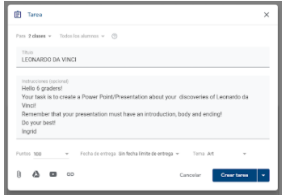
- What are webbed gloves?  
.....
- What materials are used to design this webbed gloves?  
.....
- What is the most interesting part of the text?  
.....

Discover how Leonardo did this webbed gloves and what chemical elements are used.

Guidelines Worksheet (each group their worksheet) - [S2 - Guidelines Worksheet](#)

Name ..... Date .....  
LEONARDO THE ARTIST AND THE DREAMER - Mona Lisa

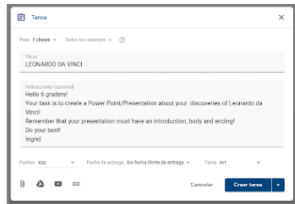
1. What do you know about Leonardo and his invention?
2. What chemical elements helped Leonardo? How the artists of this period of time made the colours (pigments) and what chemical elements they used.
3. Write your ideas in the Oral Presentation Template.
4. Get in **Google Classroom** and create a presentation about your discoveries.



5. Create your invention.

Name ..... Date .....  
LEONARDO THE ARTIST AND THE DREAMER - Perspective

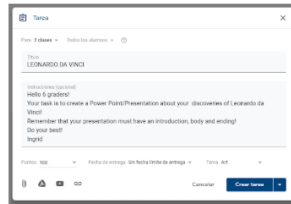
1. What do you know about Leonardo and his invention?
2. What chemical elements helped Leonardo? How a perspectograph worked and what chemical elements are used.
3. Write your ideas in the Oral Presentation Template.
4. Get in **Google Classroom** and create a presentation about your discoveries.



5. Create your invention.

Name ..... Date .....  
LEONARDO AND THE VITRUVIAN MAN

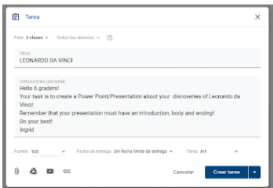
1. What do you know about Leonardo and his invention?
2. What chemical elements helped Leonardo? Discover how Leonardo did the Vitruvian Man and what chemical elements are used.
3. Write your ideas in the Oral Presentation Template.
4. Get in **Google Classroom** and create a presentation about your discoveries.



5. Create your invention.

Name ..... Date .....  
LEONARDO'S WAR INVENTIONS - Safety Bridge

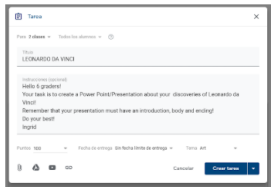
1. What do you know about Leonardo and his invention?
2. What chemical elements helped Leonardo? Discover how Leonardo did the "Safety Bridge" and what chemical elements are used.
3. Write your ideas in the Oral Presentation Template.
4. Get in **Google Classroom** and create a presentation about your discoveries.



5. Create your invention.

Name ..... Date .....  
LEONARDO IN FLIGHT - Parachute

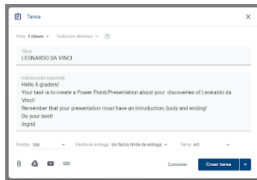
1. What do you know about Leonardo and his invention?
2. What chemical elements helped Leonardo? Discover how Leonardo did this parachute and what chemical elements are used.
3. Write your ideas in the Oral Presentation Template.
4. Get in **Google Classroom** and create a presentation about your discoveries.



5. Create your invention.

Name ..... Date .....  
LEONARDO AND THE WATER - Webbed Gloves

1. What do you know about Leonardo and his invention?
2. What chemical elements helped Leonardo? Discover how Leonardo did this webbed gloves and what chemical elements are used.
3. Write your ideas in the Oral Presentation Template.
4. Get in **Google Classroom** and create a presentation about your discoveries.



5. Create your invention.



Worksheet about the structure of the oral presentation - [S2 - Oral presentation template](#)

Name ..... Date .....



**ORAL PRESENTATION TEMPLATE**

<b>GREETINGS AND TOPIC PRESENTATION</b>	Say hello to the audience and say what are you going to talk about.
<b>MEMBERS OF THE GROUP</b>	Present yourselves.
<b>BODY</b>	Describe the topic with the use of visual support.
<b>CHEMICAL ELEMENTS INVOLVED</b>	Explain what chemical elements are important.
<b>INVITE TO QUESTIONS</b>	Ask the audience if they have any questions.
<b>ENDING</b>	Say goodbye and thank you to the audience.

Periodic Table of the Elements

Name ..... Date .....

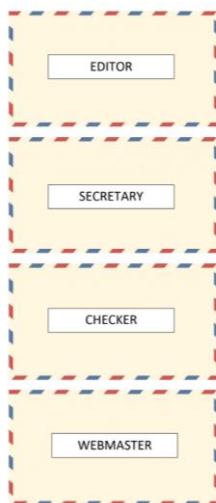


**LANGUAGE SUPPORT**






<b>GREETINGS AND TOPIC PRESENTATION</b>	<b>MEMBERS OF THE GROUP PRESENTATION</b>
Hello... Good morning... Good afternoon... Today we will talk about... We are here to present...	Our names are... We are...
<b>INVITE TO QUESTIONS</b>	<b>ENDING</b>
Have you got any question? Do you want to ask something? Is everything clear?	We hope you enjoyed our oral presentation. Thank you for listening. Goodbye. See you soon.



Envelopes with the roles of the group - [S2 - Group Roles.](#)



2.3	<p><i>Name and description:</i> <b>Start the presentation</b> (power point) in Google Classroom. This activity will last at least one more session.</p> <p><i>Assessment tool:</i> Teacher Assessment in Google Classroom.</p> <p><i>Material:</i> Chromebooks - Google Classroom</p>	30'	✓	✓	✓	-																																								
2.4	<p><i>Name and description:</i> <b>Rubric session 2</b></p> <p><i>Assessment tool:</i> Rubric</p> <p><i>Material:</i> <a href="#">Worksheet of the rubric</a></p> <div data-bbox="165 587 900 783"> <p style="text-align: right;">Date: _____</p> <table border="1"> <thead> <tr> <th>From SESSION 2 and 3</th> <th colspan="3">I can...</th> <th colspan="3">The group can...</th> <th>For example... (3 words)</th> </tr> <tr> <td></td> <td>😬</td> <td>😬</td> <td>😬</td> <td>😬</td> <td>😬</td> <td>😬</td> <td></td> </tr> </thead> <tbody> <tr> <td>... inquiry to search for solutions to problems linked to the project</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>... work in group.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> </div> <div data-bbox="165 938 900 991"> <table border="1"> <tr> <td>... elaborate a presentation through Google Classroom.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> </div>	From SESSION 2 and 3	I can...			The group can...			For example... (3 words)		😬	😬	😬	😬	😬	😬		... inquiry to search for solutions to problems linked to the project								... work in group.								... elaborate a presentation through Google Classroom.								5'	✓	✓	-	✓
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... elaborate a presentation through Google Classroom.																																														

SESSION 4: Hands-on inventions								
Objectives of the session: <ul style="list-style-type: none"> <li>- Work cooperatively in groups.</li> <li>- Be able to build one of Leonardo da Vinci's inventions.</li> </ul>								
Content-obligatory language for the session: <ul style="list-style-type: none"> <li>- Materials used on each invention (according to the group).</li> <li>- I need... Can I borrow..., please ? Can I have..., please? Thank you.</li> </ul>								
<b>Activities</b> <i>include : Name and description; Assessment tool (if any); Material (including language support)</i>								
4.1	<i>Name and description:</i> <b>Warm up.</b> Refresh what we did on previous sessions and get some feedback, talk about the Group Roles, whether they worked or not. <i>Assessment tool:</i> - <i>Material:</i> -			5'	✓	✓	-	-
4.2	<i>Name and description:</i> <b>Hands-on inventions.</b> Give the instructions and students have to follow them to start building the invention. <i>Assessment tool:</i> -			15'	✓	✓		

Material: [Worksheet S4 - Build it yourself](#), with some clues/steps.

Name ..... Date .....

LEONARDO THE ARTIST AND THE DREAMER - Mona Lisa

**Build It Yourself**

Make Your Own Paint

What you'll need

- dirt and two rocks
- egg yolk
- brush
- painting surface

pigment from ground-up dirt + egg yolk = paint

What to do

1. Have an easy way to make your own paint: Go outside and find some interesting colored dirt, or even a crumbly piece of brick. Scoop up a little, let it dry overnight, and then crush the dirt between two rocks so it's powdery.
2. Mix the dirt with some egg yolk, and paint it on a piece of paper, a board, or even a flat rock. Try experimenting with dirt taken from different locations—you'll be surprised in the variety of colors plain old dirt can have.
3. Try other ingredients: the pusils or stamens of daisies, for example, will make a bright yellow paint, as will crumbled alfalfa. Charcoal will make a grayish black paint. Experiment with natural ingredients you can find around your house, yard, or park. Just remember that in order to work well, they need to be crushed to a fine powder, then mixed with the egg yolk.

From the book "Amazing Leonardo da Vinci Inventions: You can build yourself" by Marlene Anderson Ed. Norma Press

Name ..... Date .....

LEONARDO THE ARTIST AND THE DREAMER - Perspective

**Build It Yourself**

Build Your Own Perspectograph

What you'll need

- heavy cardboard for frame—an old pizza box works well
- CD case broken apart into top and bottom pieces
- ruler
- X-acto knife
- dry-erase marker
- tracing paper
- sheets of acetate—clear plastic often used for overhead projectors

What to do

1. Draw and cut out templates A and B from the cardboard.
2. Measure the length of the CD case and cut a slot into template A so the CD cover fits snugly.
3. Measure the length of your eye piece (template B) and cut another slot in template A so the eyepiece fits snugly.
4. Cut a slot in the narrow end of the eyepiece so you can see out of it with one eye. Make sure when you look through the eyepiece that you look through the CD case to the scene you want to draw. If the eyepiece is too high, cut some off the bottom of the CD case when you look through the eyepiece slot.

Clear top to CD case

From the book "Amazing Leonardo da Vinci Inventions: You can build yourself" by Marlene Anderson Ed. Norma Press

Name ..... Date .....

Amazing Leonardo da Vinci Inventions

Look through your perspectograph and trace the outline of the scene onto the CD case with the dry-erase marker. Then remove the CD case from the frame—you will have a small but accurate outline of the scene!

Alternative method for a larger drawing:

Remove the CD case from your perspectograph. Move to a large window. Tape a sheet of acetate (clear plastic) onto the window, and line up the perspectograph with the acetate so when you look through the eyepiece the acetate is between you and the scene you want to sketch. Draw the outline of the scene you see through the eyepiece onto the acetate, then transfer it to a sheet of tracing paper.

From the book "Amazing Leonardo da Vinci Inventions: You can build yourself" by Marlene Anderson Ed. Norma Press

Name ..... Date .....

LEONARDO AND THE VITRUVIAN MAN

**Build It Yourself**

Build your own Vitruvian Man

What you'll need:

- Measuring Tape
- Paper
- Pencil
- Photographs...

Objective:

To determine if the Vitruvian theory, that height is equal to arm span, is true.

Working with a partner, accurately measure each other's arm span and height. Record these data in a table.

Does it happen the same with children and adults?

What other curiosities can you discover?

From the book "Amazing Leonardo da Vinci Inventions: You can build yourself" by Marlene Anderson Ed. Norma Press

Name ..... Date .....

LEONARDO'S WAR INVENTIONS - Safety Bridge

**Build It Yourself**

Make Your Own Portable Bridge

You can build a model of this bridge to be any size, from a tiny Popsicle stick table-top model, to a full-size version made from tree branches and brush. For a full-size bridge you will need to lash the ladder components together with rope. If you make the table-top version you won't need glue or anything to hold the bridge components together. The amazing thing about Leonardo's bridge is that the supports are "woven" into a grid that makes the bridge sturdier as more weight is put on it.

The directions below are for building a full-size version of the bridge using branches from around your yard (or from a local park). Don't build it over water, and make absolutely sure that no one is underneath the bridge when you are constructing it or trying it out!

What you'll need

- six sticks approximately 3 feet long for sides of the ladder (or any size as long as they are all about the same length)
- five sticks approximately 1 foot long for the ladder rungs (about a third as long as the ladder sides)
- ten pieces of rope or string to lash cross-pieces to ladder sides
- brush or cardboard to lay over the framework

What to do

1. Place the first two 3-foot long sticks on the ground lengthwise. Measure up approximately 1 foot, and lash one of the 1-foot rungs to the sticks as shown (diagram at left).
2. Measure up another foot and do the same thing.

From the book "Amazing Leonardo da Vinci Inventions: You can build yourself" by Marlene Anderson Ed. Norma Press

Name ..... Date .....

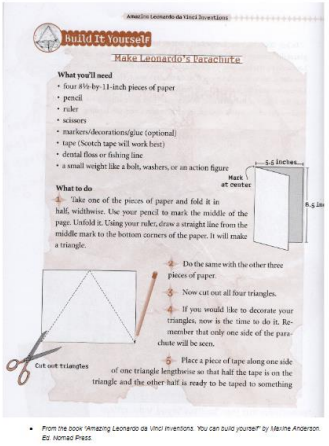
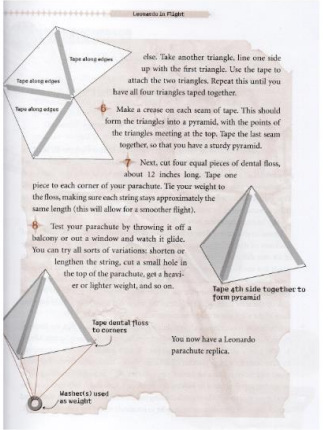
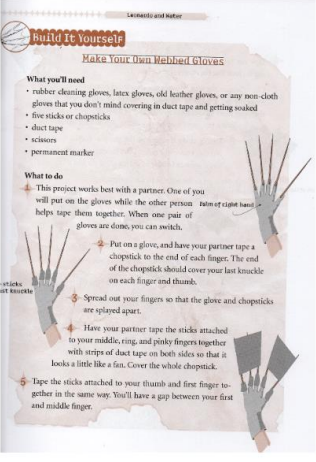
Amazing Leonardo da Vinci Inventions

Now lay out two more 3-foot-long sticks and follow the directions as above.

You will now have two mini-ladders. Lay these on the ground end to end, making sure that the last foot of each mini ladder is overlapping. Take the last foot-long ladder rung and place it under the two long ladder pieces.

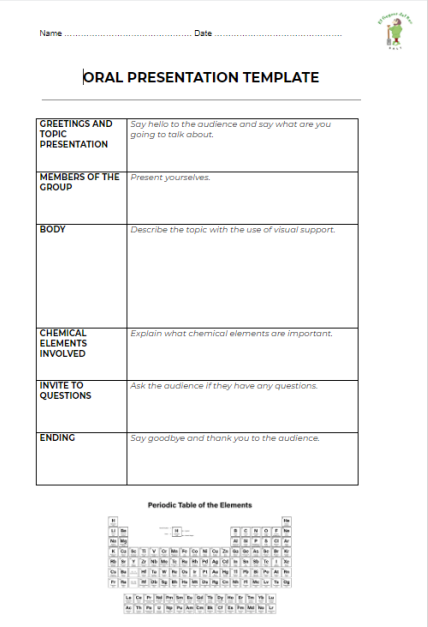
Take the last two 3-foot ladder pieces and place one end of each on top of the last ladder rung on one side, under the center ladder rung, and back on top of the top ladder rung on the other side. This will make the bridge arc. Lash the ends of the long pieces to the rungs.

Lay brush, boughs, and whatever else you have to cover the framework and make your bridge support more weight. If you don't have brush you can always use large pieces of cardboard or even blankets (be careful you don't fall through!).

	<p>Name _____ Date _____</p> <p>LEONARDO IN FLIGHT - Parachute</p>  <p>From the book 'Amazing Leonardo da Vinci Inventions. You can build yours!' by Meline Anderson. Ed. NOMAD Press</p>	<p>Name _____ Date _____</p> <p>LEONARDO IN FLIGHT</p>  <p>From the book 'Amazing Leonardo da Vinci Inventions. You can build yours!' by Meline Anderson. Ed. NOMAD Press</p>	<p>Name _____ Date _____</p> <p>LEONARDO AND THE WATER - Webbed Gloves</p> 						
4.3	<p>Name and description: <b>Start creating an invention.</b> This activity will last at least one more session.</p> <p>Assessment tool: -</p> <p>Material: The material used on each invention.</p>				35'	✓	✓	-	✓

4.4	Name and description: <b>Rubric session 3</b>					5'	✓	✓	-	✓																																			
	Assessment tool: Rubric																																												
	Material: <a href="#">Worksheet of the rubric</a>																																												
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<h2>SESSION 7: The end of the project.</h2> <p>Objectives of the session:</p> <ul style="list-style-type: none"> <li>- Give their opinion and evaluate their work.</li> <li>- Show their work at the entrance of the school.</li> </ul>										
<p>Content-obligatory language for the session:</p> <ul style="list-style-type: none"> <li>- What do you think about...?</li> <li>- What is your opinion about...?</li> <li>- Google Docs</li> <li>- Titles for the exhibition of their work.</li> </ul>										
<p>Activities</p> <p><i>include : Name and description; Assessment tool (if any); Material (including language support)</i></p>										

*6	<p><i>*It's important to take into account that we have done the oral presentations previously in session 6.</i></p> <p>Name and description: <b>Oral presentation</b>/Audience-presented product</p> <p>Assessment tool: Rubrics about the oral presentations - TA</p> <p>Material: Worksheet about the structure of the oral presentation - <a href="#">S2 - Oral presentation template</a></p> 	50'	✓	✓	-	-
7.1	<p>Name and description: <b>Enclosure - video</b> of an actor who performs Leonardo da Vinci.</p> <p>Assessment tool: -</p> <p>Material: <a href="#">S7 - Enclosure Video</a></p>	2'	✓	✓	✓	-
7.2	<p>Name and description: <b>Set the projects.</b> The groups place their projects at the entrance of the school with their power points printed and their suitable titles.</p> <p>Assessment tool: <b>Reflection/Assessment.</b> The pupils finish the rubric worksheet to close the project and they have to fill in a Google Forms to get their opinion about all the projects. And moreover,</p>	58'	✓	✓	-	✓

the teacher makes the assessment and checks all the information from the Rubrics and Google Forms.

*Material:* All the projects done by the students.

[Worksheet of the rubric](#)

Date: _____						
From SESSION 6	I can...			The group can...		
	😊	😐	😞	😊	😐	😞
						For example... (3 words)
... share information in English with my classmates.						



... be proud of my work.						
--------------------------	--	--	--	--	--	--

Once the project is finished, write...

3 things you found out			
2 interesting things			
1 question you still have			

[Google Docs](#)

\*Click the link to get in the web page.

## Teaching Materials

Due to the amount of teaching materials I have considered better to attached all the materials after each activity within the template.