



DIDACTIC GUIDE
SCIENTIFIC SCHOOL CALENDAR 2022



Index:

1. Activity: Card of the Super-science Academy	page 4
2. Activity: Timeline	page 14
3. Activity: STEM everywhere	page 17
4. Activity: Temporary agent of IOPSA	page 20
5. Activity: Galactic mail	page 23
6. Other activities	page 26
7. Universal accesibility guidelines	page 27
8. Bibliography	page 28
9. Annex	page 29



SCIENTIFIC SCHOOL CALENDAR 2022

Project FECYT - FCT-20-16375

More info: <http://www.igm.ule-csic.es/calendario-cientifico>



Introduction

The intention of this didactic guide is to propose alternatives and ideas to work in the classroom with this **Scientific School Calendar**. All the proposed activities can be adapted to the different ages and the teachers are free to make as many changes as they deem appropriate for a better didactic use. Therefore, the proposed activities should be understood only as guidelines. It will be each teacher who will get the most out of their group-class.

Although all the activities may be used in different subjects depending on their final orientation, they would be more meaningful as interdisciplinary work in **STEM** subjects (Science, Technology, Engineering, and Mathematics) and others more specific of humanities. The aim is to promote a comprehensive scientific culture and critical thinking that is applicable to all fields of knowledge.

The didactic proposals that accompany this Scientific Calendar are based on the principles of inclusion, normalization, and equity. In order to develop activities that are useful to all students, the provided tasks include a wide range of skills and difficulty levels. When these tasks are developed cooperatively, it will allow all students in the classroom to make valuable and relevant contributions. In any case, it is important to understand the activities proposed here as base examples that can and should be adapted to the specific circumstances of the students and the classroom. Similarly, the evaluation rubrics should also be a starting proposal that must be adapted to the reality of the classroom.

At the end of the document, you will find several general accessibility guidelines and scientific work guidelines related to accessibility and universal design.

Last, 24 easy-to-read ephemerides are also provided as a reference to work with younger students with communication difficulties.



1. ACTIVITY

CARD OF THE SUPER-SCIENCE ACADEMY



Goals:

- To familiarize students with prominent figures in the history of science.
- To provide an overview of science as the cumulative work of many people and over a long period of time.
- To promote the values associated with science and its methods.

Contents:

- Concepts and basic elements about the person(s) and its/their historical moment.
- Methods of searching for information in analogic or digital media.
- Assessment of the diversity of personal and professional profiles that contributed to the progress of science, in particular with a gender perspective.

Key competencies:

Although the activity allows the development of all key competences, it will emphasize on «social and civic competences», «competences in mathematics, science and technology», and «learning to learn competence».

Timing:

1 to 2 class sessions (50 to 120 minutes).

**Materials:**

Photocopiable cards of the **Super-science Academy**.

Development:

The activity can be completed individually or in pairs.

The teacher will choose as many ephemerides as needed (one per student in case of individual work) and will fill in the schematic information sheet. Depending on the level of the students and their ability to search, some of the fields may be left in blank and the students will carry out the search.

Each student (or each pair) is given a blank card and the information sheet. Students must fill in the different fields of the card.

Later on, the cards can be laminated to be used in future activities.

Extension:

The cards can be used as «Memory» cards, the popular matching game, or to make a timeline on the wall of the classroom, or on the hallways of the center.

Evaluation:

Assessment of the ability to find the requested information and the effort to represent the achievement or discovery into the drawing, in accordance with the following rubric:



25% OF THE ASSIGNED SCORE	50% OF THE ASSIGNED SCORE	75% OF THE ASSIGNED SCORE	100% OF THE ASSIGNED SCORE
<p>The student transfers the information contained in the information sheet provided by the teacher but is not able to identify the missing information, even with support.</p>	<p>The student transfers the information contained in the information sheet provided by the teacher and is able to identify the missing information with the teacher's support.</p>	<p>The student transfers the information contained in the information sheet provided by the teacher and is able to identify the missing information alone, or collectively with the classmates.</p>	<p>The student transfers the information contained in the information sheet provided by the teacher, identifies the missing information alone, or collectively with the classmates, and helps others less capable to complete this task.</p>
<p>The graphic representation is hardly related to the person or the commemorated event.</p>	<p>The student transfers the information contained in the information sheet provided by the teacher and is able to identify the missing information with the teacher's support.</p>	<p>The graphic representation presents the person commemorated and includes some reference to the commemorated event.</p>	<p>The graphic representation is a faithful reflection of the person and the commemorated event.</p>



Super-science academy 



NAME AND SURNAME: _____

BIRTHDATE: _____

HOW MANY YEARS DID SHE/HE LIVE?: _____

FEMALE/MALE: _____

DISCOVERY OR WORK FIELD: _____

Card (1st to 3rd year of Primary Education)



Teaching information sheet (4th to 6th year of Primary Education)

Name and surname: _____

Female/male: _____

Date of birth: _____ Date of death: _____

How many years did she/he live?: _____

Country: _____

Discovery or work field / specialization: _____

Short biography of 5 to 10 lines: _____






Super-science academy

NAME AND SURNAME: _____

DATE OR BIRTH: _____ DATE OF DEATH: _____

HOW MANY YEARS DID SHE/HE LIVE?: _____

FEMALE/MALE: _____

COUNTRY: _____

DISCOVERY OR WORK FIELD / SPECIALIZATION: _____

SHORT BIOGRAPHY OF 5 TO 10 LINES: _____





Teaching information sheet (Secondary Education)

Name and surname: _____

Date of birth: _____ Date of death: _____

How many years did she/he live?: _____

Female/male: _____

Country: _____

Discovery or work field / specialization: _____

Short biography of 5 to 10 lines: _____





Super-science academy 



NAME AND SURNAME: _____

FEMALE/MALE: _____

DATE OF BIRTH: _____ DATE OF DEATH: _____

HOW MANY YEARS DID SHE/HE LIVE? _____

COUNTRY: _____

DISCOVERY OR WORK FIELD / SPECIALIZATION: _____

RELATED SCIENTISTS: _____

INFLUENCES RECEIVED AND EXERTED: _____

Card (Secondary Education)



2. ACTIVITY TIMELINE

Goals:

- To show knowledge generation from a temporary and constantly evolving perspective.
- To favor an interpretation of scientific advances from a historical and non-presentist perspective.
- To encourage a critical approach to the evolution of scientific advances.

Contents:

- Scientific-technical advances and their historical moments.
- Presence of women and men in different fields of knowledge and different historical moments.
- Relationship between scientific-technical and mathematical advances and the social and scientific environment in which they were developed, including the interaction with other scientific advances.

Key competencies:

Although the activity allows the development of all key competencies, it will emphasize on «social and civic competences», «competences in mathematics, science and technology», and «learning to learn competence».

Timing:

2 to 3 classroom sessions (100 to 180 minutes).

Materials:

Applications for creating digital [timelines](#)¹ or wallpaper and cards.



Development:

Different ephemerides are selected. Depending on the didactic orientation and the maturity of the students, this selection can be made by the teacher or let the students decide. It can also be limited to a certain period (month, trimester...) and progressively expanded throughout the school year, or addressed in a single moment covering the entire calendar year.

Each student or team (if a more collaborative work is decided) must make a card of their assigned ephemerides. This card will contain the information requested by the teacher or it will be the group-class who determines it collaboratively.

The different cards will be placed physically or virtually in the corresponding temporary place for subsequent consultation or joint visualization.

Extension:

This timeline can be enriched with the historical context of the different periods, such as great wars that mark historical limits, etc.

A debate can be established about the accumulation or absence of ephemerides at certain times, the greater or lesser presence of women, or the link between these historical events and other relevant ones in the geopolitical or social sphere.

Evaluation:

The ability to select information and to integrate knowledge in the historical context will be assessed according to the following rubric:



25% OF THE ASSIGNED SCORE	50% OF THE ASSIGNED SCORE	75% OF THE ASSIGNED SCORE	100% OF THE ASSIGNED SCORE
<p>The selected information is incidental or of a very basic nature, and it does not derive from an individual or group reflection process.</p>	<p>The selected information is minimal but relevant, deriving from a superficial reflection process.</p>	<p>The selected information is pertinent. It derives from a reflective process, but it is stated literally.</p>	<p>The selected information is pertinent, complete, and not excessive. It has been selected through a reflective process and it has been critically reworked.</p>
<p>IN CASE OF ADDRESSING A HISTORICAL DEBATE...</p>			
<p>The interpretation of the ephemerides is isolated, without integration into the historical context.</p>	<p>The interpretation of the ephemerides is made based on very superficial elements of historical knowledge.</p>	<p>The interpretation of the ephemerides is coherent from the historical perspective and allows a better understanding of the anniversary.</p>	<p>The interpretation of the ephemerides is coherent from the historical and scientific perspective, it is related in a complex way to other historical events and, in particular, to other scientific-technical advances.</p>



3. ACTIVITY

STEM EVERYWHERE

Goals:

- To show knowledge generation from a global, geopolitical and social perspective.
- To guide an interpretation of scientific advances from a perspective that values the ubiquity of discoveries over time.
- To encourage a critical approach to the evolution of scientific advances.

Contents:

- Scientific-technical advances, their ubiquity and the importance of scientific training for everyone.
- The presence of scientific-technical developments by people from all countries and nations while they have access to training (academic or informal).
- The relationship between scientific-technical and mathematical advances and the social and scientific context in which they are developed.

Key competencies:

Although the activity allows the development of all key competencies, it will emphasize on «social and civic competences», «competences in mathematics, science and technology», and «learning to learn competence».

Timing:

2 to 3 classroom sessions (100 to 180 minutes).



Materials:

Historical or contemporary maps. A [scholar Geographical Information System \(GIS\)](#)² can be used. Another option is to create layers in an interactive map, such as Google Maps.

Development:

Different ephemerides are selected. Based on the didactic orientation and the maturity of the students, this selection can be made by the teacher or let the students decide. It can also be limited to a certain period (month, trimester...) and it can be progressively expanded throughout the school year, or it can just be addressed in a single moment covering the entire calendar year.

Each student or team (if a more collaborative work is chosen) must prepare a card with the ephemerides assigned to them. This card will contain the information requested by the teacher or it will be the group-class who determines it collaboratively.

The different file cards will be physically or virtually located in the corresponding geographic location for joint consultation or visualization.

Extension:

This collaborative map can be enriched by layers that mark geographic boundaries across different periods.

A debate can be established about the accumulation or absence of ephemerides in certain places or regions, the greater or lesser presence of women, or the connection of these discoveries to other relevant ones in the geopolitical or social sphere.

This activity and the previous one can be done together to allow a higher level of understanding, debate, and critical thinking.

Evaluation:

The ability to select information and to integrate knowledge in the historical context will be assessed according to the following rubric:



25% OF THE ASSIGNED SCORE	50% OF THE ASSIGNED SCORE	75% OF THE ASSIGNED SCORE	100% OF THE ASSIGNED SCORE
<p>The selected information is incidental or of a very basic nature, without responding to an individual or group reflection process.</p>	<p>The selected information is minimal but relevant, responding to a superficial reflection process.</p>	<p>The selected information is pertinent, it responds to a reflective process, but it is stated literally.</p>	<p>The selected information is pertinent, complete, and not excessive, it has been selected through a reflective process and a critical reworking of it is recorded.</p>
<p>IN CASE OF ADDRESSING A GEOPOLITICAL AND SOCIAL DEBATE...</p>			
<p>The interpretation of the ephemerides is isolated and is not integrated into the historical, geopolitical, and social context.</p>	<p>The interpretation of the ephemerides is made based on very superficial elements of historical, geopolitical, and social knowledge.</p>	<p>The interpretation of the ephemerides is coherent from the historical, geopolitical, and social perspective, allowing a better understanding of the event.</p>	<p>The interpretation is coherent from the historical, geopolitical, social, and scientific perspective. It is related in a complex way with other historical events and, in particular, with other scientific-technical advances</p>



4. ACTIVITY

TEMPORARY AGENT OF THE IOPSA

(International Organization for the Protection of Scientific Advances)

Goals:

- To analyze scientific and technical advances from a comprehensive and contextualized perspective.
- To establish methods for collecting scientific and technical information and subsequent divulgation.
- To encourage curiosity and critical thinking in the search and presentation of information.

Contents:

- The outstanding information of the personality or the event chosen or honored.
- Types of texts: interview, news, speech...
- Truthful and educational presentation of the information.

Key competencies:

Although the activity allows the development of all key competencies, it will emphasize on «linguistic communication competence», «social and civic competences», «digital competence», and «initiative and entrepreneurial spirit competence».

Timing:

2 to 3 classroom sessions (100 to 180 minutes).

Materials:

Analogical or digital resources (on or off-line) to search for information.



Development:

Different honored personalities are selected, either by the teacher or by the students collectively.

The classroom is divided into groups and each group will be assigned one of them. Each group of students will therefore be a team of **temporary agents of the IOPSA** (International Organization for the Protection of Scientific Advances). Temporary IOPSA agents travel through time taking care of the memory of scientific advances, their correct interpretation, and recognition.

As part of their mission, they will be responsible for one or more of the following tasks:

- The records are fragile and could be lost. Thus, temporary agents keep up-to-date the first-hand information obtained from the scientists themselves. The team must conduct a fictitious interview with the assigned personality and record the results in a **Top Public report** (License to disclose).
- The recognition of the general public is important, but so is the recognition of the scientific and technical community. Therefore, they must organize an award ceremony for the assigned personality. The ceremony will be intertemporal and attended by the most distinguished scientists, technologists, engineers, and mathematicians of all time. They should write the hypothetical delivery speech recognizing the trajectory or achievement of the assigned personality.
- The greatness of a scientific feat does not guarantee that it will be remembered. That is why the **temporary IOPSA agents** have the task to sneak into the press, radio, television, etc. and make informative communications that remind the general public of discoveries or people who are at risk of being forgotten. The team will produce one of these communications in a predetermined format or a format of their choice.

In order to carry out this activity, an important documentation process by the students will be necessary. The greater the maturity of the students, the greater the autonomy in the search and selection of information, and in the “staging” of the knowledge acquired.



Extension:

As **temporary IOPSA agents**, they can design many creative activities, such as bringing a scientist from the past to a current laboratory and inventing what sensations and conversations they would have with the people who work there today.

Evaluation:

The ability to select information and to integrate knowledge in the historical context will be assessed according to the following rubric:

25% OF THE ASSIGNED SCORE	50% OF THE ASSIGNED SCORE	75% OF THE ASSIGNED SCORE	100% OF THE ASSIGNED SCORE
The information selected is incidental or of a very basic nature, without responding to a process of contrast, selection, and group reflection.	The selected information is minimal but relevant, responding to a process of contrast, selection, and group reflection.	The selected information is relevant, it responds to a reflective process of selection and contrast, but it is consigned literally and not adapted to the historical context.	The selected information is pertinent, complete, and not excessive. It has been selected through a reflective contrasting process and a critical reworking of it is consigned based on the historical context.
The staging (text, speech, etc.) is contemporary, except for some historical or geographical topic.	The staging (text, speech, etc.) is fundamentally contemporary, but includes some historical or geographic element that helps on contextualization.	The staging (text, speech, etc.) is appropriate to the historical and geographical context through simple resources.	The staging (text, speech, etc.) is appropriate to the historical and geographical context, displaying a variety of creative resources.



5. ACTIVITY

THE GALACTIC MAIL

Goals:

- To analyze scientific and technical advances from a comprehensive and contextualized perspective.
- To establish methods for collecting information and subsequent scientific and technical divulgation.
- To encourage curiosity and critical thinking in the search and presentation of information.
- To encourage creativity divulging scientific and technical information.

Contents:

- The outstanding information of the personality or the event chosen or honored.
- Didactic and informative resources in the exhibition of scientific knowledge (graphics, infographics, etc.).

Key competencies:

Although the activity allows the development of all the key competences, it will emphasize on «competence in linguistic communication», «social and civic competences», «digital competence», and «initiative and entrepreneurial spirit competence».

Timing:

2 to 3 classroom sessions (100 to 180 minutes).

Materials:

Analogical or digital resources (on or off-line) to search for information.



Development:

One or multiple personalities or events are selected, either by the teacher, or by the students collectively.

The classroom is divided into small groups or pairs and each group will be responsible for one of the personalities or events, or all groups are in charge of one event or personality but from different perspectives.

Each group of students will be, therefore, a team of reporters from **The Galactic Mail**, an interstellar transmedia news platform whose mission is to cover local news from the **SS Sector** (Solar System Sector), one of the most remote known planetary systems. In the SS Sector there is only a small inhabited planet, but its scientific advances are key in the development of some of the most important theories and technologies of the known universe. However, the specie that has developed them, the human being, is quite peculiar and what is easy to understand for them may be almost a science fiction exercise for the rest of the universe. Their mission as local reporters will be to lead the «Earth Science» section, in which through informative communications (a specific format or a format of their choice) they will explain to the rest of non-terrestrial life in the Galaxy, the scientific advances or the historical relevance of the facts and people honored.

But attention! Things that are obvious for an earthling, may not be so obvious for someone from any of the inhabited exoplanets of the solar system. Even the most obvious issue will need to be explained.

In order to carry out this activity, an important documentation process by the students will be necessary. The greater the maturity of the students, the greater the autonomy in the search and selection of information, and in the «staging» of the knowledge acquired.

Extension:

Contest in the classroom to determine which of the informative communications occupies the cover page.

Evaluation:

The ability to select information and to integrate knowledge in the historical context will be assessed according to the following rubric:



25% OF THE ASSIGNED SCORE	50% OF THE ASSIGNED SCORE	75% OF THE ASSIGNED SCORE	100% OF THE ASSIGNED SCOREA
<p>The information selected is incidental or of a very basic nature, without responding to a process of contrast, selection, and group reflection.</p>	<p>The selected information is minimal but relevant, responding to a process of contrast, selection, and group reflection.</p>	<p>The information selected is pertinent. It responds to a reflective process of selection and contrast, but it is consigned literally and not adapted to the fictitious context that arises.</p>	<p>The information selected is pertinent, complete, and not excessive. It has been selected through a reflective contrasting process and a critical reworking of it is consigned based on the fictitious context that arises.</p>
<p>The resources used in the explanation are, for the most part, inadequate, composed of a collage of previous elements.</p>	<p>The resources used, although adequate, are reused or taken from various sources, but without reworking or adjusting.</p>	<p>The resources used combine some pre-existing ones and others of their own creation.</p>	<p>The resources used, adequate and pertinent, are mostly self-made or derived from the adaptation of other pre-existing ones.</p>



6. OTHER ACTIVITIES

Any of the proposed activities can be enriched with the others or with small parallel activities such as:

- To find out a scientific theory that was already known at the time of the honoree and one that was not, and to comment on its implications.
- To identify, view, and comment on an audiovisual resource (video, presentation, etc.) on the chosen topic or person, individually or in a group.
- To recreate an experiment carried out by the honoree (in the case of simple experiments).
- To identify and to present in the classroom a famous quote (if applicable) of the honoree.
- To identify at least 3 people from different countries or from different times (or 3 women if we want to focus on gender equality) who work in the same field of knowledge.
- To imagine the honoree as a superhero. From that premise, to carry out a contest in the classroom to design the one who would be her arch-enemy or the supervillain she/he would fight in a supposed comic that would relate her/his adventures.

Bonus: To make a small comic with the adventures.



7. UNIVERSAL ACCESSIBILITY GUIDELINES

In general, the recommendations that apply to work in the classroom from the perspective of inclusion and attention to diversity must be followed, adapting resources, times, and spaces according to the needs of each student. In particular, attention must be paid:

- To offer different ways of accessing information. Written or oral texts can be used, being adapted to Braille, including explanations in sign language, relief drawings, 3D designs, adaptation to pictograms, etc. Multi-sensory information is beneficial to the entire classroom. A relief design or a 3D model of a planetary system, for example, is useful not only for those students with vision difficulties or reading comprehension problems, but it also gives a broader and more complete vision to the whole class.
- To allow the tasks to involve the development of multisensory results that let all students to actively participate in their preparation and explanation. [Wanda Díaz-Merced](#)³ lost her sight while she was a graduate student in Puerto Rico. She decided to use sonification to convert large data sets into sound and today she is a renowned astronomer who conducts her research using this technique. Opting for different representation modes also contributes to the advancement of science.
- To write all complementary information in a clear and simple way. You can use the [easy-read recommendation](#)⁴. They are not only useful for people with reading comprehension problems (including dyslexia) but they also make texts more understandable for everyone.
- A quote attributed to Albert Einstein (and probably apocryphal) says that you don't really understand something until you are able to explain it to your grandmother. There is no reason, therefore, to leave any student behind. Projects such as **PDI Ciencia** (<https://www.pdiciencia.com>), **Science without Barriers** (<https://www.ucm.es/geodivulgar/asociacion-ciencia-sin-barreras>) or the **Astronomy Club for the Blind** (<https://www.parqueexplora.org/comunidades/club-de-astronomia-para-ciegos>) are good examples of this.



8. BIBLIOGRAPHY

¹Innovación y Desarrollo Docente (2018).

La línea del tiempo como recurso de aprendizaje.

Recovered from:

<https://iddocente.com/linea-tiempo-recurso-aprendizaje/>

² ESRI España (2019). El Atlas Digital Escolar.

Recovered from:

<https://learning.esri.es/caso-de-exito/atlas-digital-escolar/>

³https://en.wikipedia.org/wiki/Wanda_D%C3%ADaz-Merced

⁴Guides to create easy read texts:

<http://blog.intef.es/cniie/2016/07/01/guia-para-la-lectura-facil/>

https://sid.usal.es/idocs/F8/FD022225/elaborar_textos_lectura_facil.pdf

<https://www.plenainclusion.org/sites/default/files/lectura-facil-metodos.pdf>



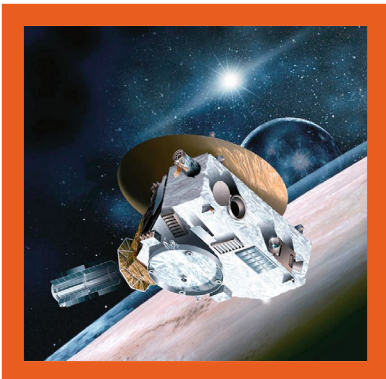
- **Adriana Ocampo** born on January 5, 1955 was a planetary geologist.

Planetary geology studies the inside of other planets. Adriana Ocampo directed the NASA Science Program. NASA is the space agency of the United States. Adriana Ocampo was responsible for two important missions:

- The mission of the space probe that went to Jupiter and was called Juno.

- The mission of the space probe that went to Pluto and was called New Horizons.

A space probe is a device that we launch into space to study celestial bodies such as planets, asteroids, etc.



- On January 19, 2006, NASA launched the **New Horizons** space probe.

The New Horizons probe reached Pluto in 2015.



- **Paleontology** is the science that studies ancient life on Earth.

Paleontologists study fossils.

A fossil is a former living being that, when it died and after many thousands of years, turned into a stone.

Ammonites are animals that no longer exist.

They resembled a shell.

- There have been many female paleontologists in the past. Nowadays, there are also many female paleontologists.

On February 1, 1888, **Winifred Goldring** was born in the United States. Winifred Goldring was one of the first female paleontologists.



- On February 11, 1889, **Ekaterina Vladimirovna Lermontova** was born in Russia.

Ekaterina Vladimirovna Lermontova was also a female pioneer of paleontology.

Being a pioneer means being one of the first people to do something.

Ekaterina Vladimirovna Lermontova studied a type of fossil called trilobites. Trilobites are animals that no longer exist and of which many fossils are known.

Trilobites resembled the roly-poly bug, but they lived in water.



- On February 12, 1921, **Asunción Linares** was born in Spain.

Asunción Linares was a paleontologist and professor of paleontology.

Asunción Linares studied a type of fossil called ammonites. Ammonites resemble shells.



- On February 27, 1930, **Mary R. Dawson** was born in the United States.

Mary R. Dawson was a paleontologist and studied fossils in the Arctic. The Arctic is the North Pole.



- On March 9, 1911, **Clara Rockmore** was born. Clara Rockmore was a pioneer in playing the theremin. The theremin is an electronic musical instrument that is played without touching it. It sounds by moving only your hands near an antennae.



- On March 17, 1805, **Manuel Patricio García** was born. Manuel Patricio García was a singer and singing teacher. In addition, he was very interested in knowing how the human voice worked. The voice comes out of the larynx. Manuel Patricio García invented an instrument to see it called laryngoscope.



- On April 3, 1973, the first phone call from a mobile phone was made.

The first call was made by **Martin Cooper**.

Martin Cooper worked at Motorola.

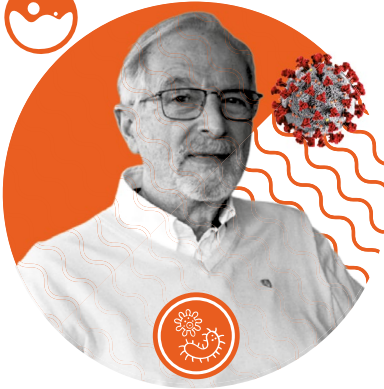
Motorola is a company that manufactures mobile phones.



- On April 7, 1827, the first box of matches was sold.

The first box of matches was sold by **John Walker**.

John Walker invented matches in 1826.



- **Vaccines** are treatments that train our body to defend itself against some diseases.

Vaccines help keep people from getting sick or the disease from being serious.

Vaccines are important because they protect us and others as well.

Because of COVID-19, vaccines are very popular now.



- On May 9, 1945, **Luis Enjuanes**, who is a chemist and studies viruses, was born.

Luis Enjuanes directs a very important laboratory that studies the coronavirus.

Coronavirus is the virus that causes COVID-19.

Luis Enjuanes' laboratory is working to invent new vaccines against the coronavirus.

- On May 14, 1796, a boy named **James Phipps** was the first person to be vaccinated in history.

James Phipps was vaccinated against smallpox.

Smallpox is a disease that no longer exists thanks to vaccines.



- There are people who distrust vaccines because they are not well informed. Distrusting vaccines is not new.

On May 19, 1804, a newspaper called **El Regañón General** published the order to be vaccinated against smallpox. As there were people afraid, the mayor and a doctor went through all the villages accompanied by people who had already been vaccinated. So, everyone saw that getting vaccinated was good and safe.



- It is very important to preserve food well so that it does not spoil and it can be eaten safely.

On June 20, 1894, the chemist **Lloyd Augustus Hall** was born.

Lloyd Augustus Hall invented several different ways to sterilize and preserve food.

Sterilizing means eliminating all germs that can cause illness.

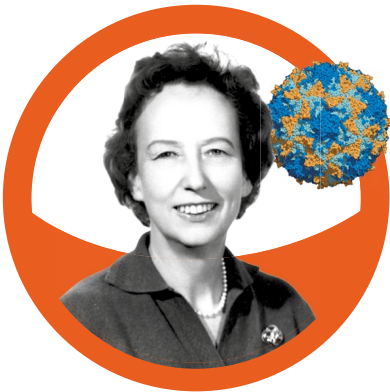
Germs are microscopic (very small, unseen) organisms that can cause a disease.



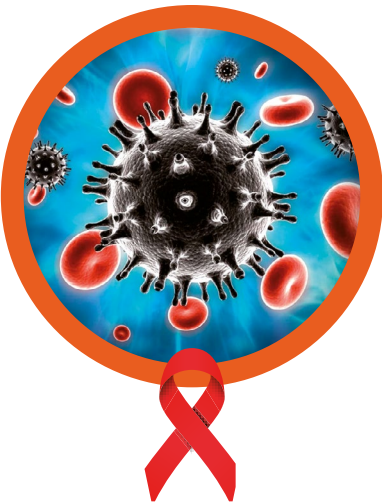
- On June 28, 1909, **Francisco Grande Covián** was born. Francisco Grande Covián was a doctor and researcher who deeply studied nutrition.

Nutrition is the science that studies what happens when you eat and what foods are most recommended.

Francisco Grande Covián died on June 28, 1995.



- On July 2, 1911, **Dorothy M. Horstmann** was born. Dorothy M. Horstmann was a pediatrician specialized in viruses and epidemics. Pediatricians are doctors who specialize in children and young people. Dorothy M. Horstmann studied the virus that causes a very serious disease called polio. Thanks to their work, a vaccine was developed.



- On July 27, 1982, a name was given to a disease that was then fatal and that made the body unable to defend itself against viruses or bacteria. This disease was called **AIDS**, which is short for acquired immunodeficiency syndrome. Immunodeficiency is the lack of immune capacity, that is, the ability to defend against diseases.



-On August 21, 1874, **Eleanor Davies-Colley** was born. Eleanor Davies-Colley was one of the first surgeons to perform surgeries in the UK.

She also founded the South London Women's and Children's Hospital.

A surgeon is a type of doctor who does surgeries.



- A little over a century ago, **syphilis** was a serious disease that could not be cured.

A century is 100 years.

On August 31, 1909, a Japanese doctor named **Sahachiro Hata** tried a new medicine for syphilis. He gave the medicine to a rabbit that had syphilis. The rabbit was cured.



- On September 7, 1936, the last **Tasmanian tiger** in the world died. That day the Tasmanian tiger became extinct.



-**Rachel Carson** is a marine biologist, meaning she is specialized in the study of seas and oceans. On September 27, 1962, Rachel Carson published a very important book called **Silent Spring**. In her book she said that there were fewer and fewer birds singing. The book made people aware of pesticide abuse.

A pesticide is a chemical used to control weeds, harmful insects, and other pests. But, if misused, it can harm animals such as birds and be a problem for the environment.



- On October 19, 1865, **John Wesley Hyatt** registered the celluloid patent.

A celluloid is a plastic that was used to record motion pictures.

Registering a patent is to make an official note that you are the one who invented it.



- On October 19, 1862, Auguste Lumière was born. Auguste had a brother named Louis.

The brothers Auguste and Louis Lumière invented the cinematograph.

The cinematograph was a machine capable of recording and projecting moving images. From the cinematograph came the cinema.



- **Smallpox** was a very serious and common disease that killed many people.

Today there is no smallpox thanks to vaccines.

For smallpox to disappear, it was necessary to vaccinate all the inhabitants of the planet. Vaccinating people from one or more countries would not have been enough to make it disappear.

As many countries did not have access to vaccines, the Government of Spain paid a **philanthropic expedition** to take them away.

An expedition is a trip to remote places.

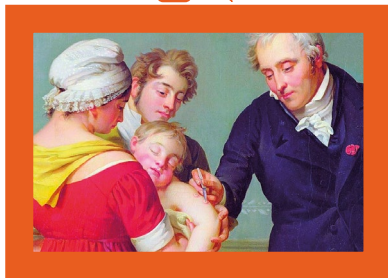
The expedition was philanthropic because it brought aid to those places for free.

On November 30, 1803, the corvette named María Pita, with the members of the expedition on board, set sail from the port of La Coruña.

To set sail is to start a journey on a boat.

A corvette is a type of ship.

Francisco Javier Balmis, who was the director of the expedition, was traveling on the María Pita. Also traveling was **Isabel Zendal**, who was a nurse, and 22 orphaned children who carried the vaccine in their body. An orphan child is a child who has lost his or her parents.

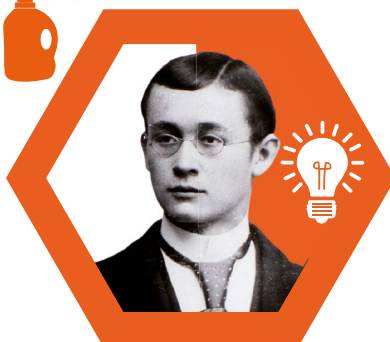




-On December 9, 1748, **Claude Louis Berthollet** was born. Claude Louis Berthollet developed a way of bleaching fabrics using a product she had invented: bleach.

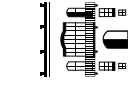
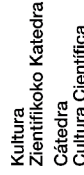


- On December 11, 1913 **Otto Rohm** patented the first enzyme detergent. The detergent was called Burnus. To patent something is to make an official note of who is its inventor.

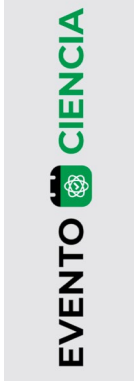


At the time, putting enzymes in detergents was very innovative, but today all detergents contain enzymes. Enzymes are substances that can transform other substances. For example, they can make dirt easy to clean.

Preparation of this calendar has been possible thanks to the financial support of:



In addition, to the collaboration of:



A special thanks to the SINC Agency for being an excellent source of information. To everyone who has participated in the compilation, revision and translation of ephemerals: Thank you very much!!

Scientific School Calendar 2022
Proyect FECYT - FCT-20-16975

More info: <http://www.igm-ute-csic.es/calendario-cientifico>

Design & illustration: Belén Ballesteros • www.belenballesteros.es