

Junior Science Cafè Laboratory

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February 20, 2023 – CHOICE JSTE, Larissa (GR)

Outline

- What is a Junior Science Café?
- Event Organisation
- Guest Speakers
- Event material and Logistics
- After the event



What is a Junior Science Café

The main objective of Junior Science Cafes is to **demystify science** and **bring it into the cultural debate**, making it a topic of conversation on the same level as culture and art, rather than a complex thing that is only for “scientists with goggles in their ivory tower”.

Junior Science Cafes are designed to **engage students** in organising a scientific debate/event, involving them in every step of the organisation.

What is a Junior Science Café

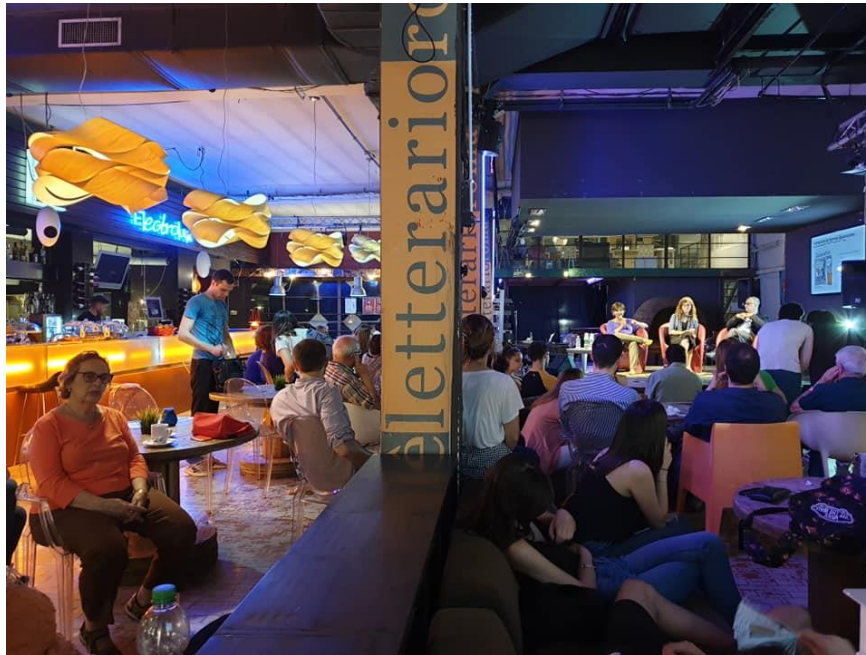
Basically, a Junior Science Café is an **informal event focusing on science**, where area experts are invited to discuss the topic at hand.

You will need:

- A cosy location (cafeteria, book shop, library)
- An informal setting
- Food and drinks



Junior Science Café organised by Mamiani High School in Rome (at school).
Etologist Prof. Alleva and psychologist Prof. Silvaggi discussed the correlations
between animal and human sexuality



Junior Science Café organised by ISS Papareschi High School in Rome (at a public cafeteria).

Psychiatrist Prof. Niolu, psychologists Giulia Lisi and Vittorio Infante guided a conversation on human psychology and mental health



Junior Science Café by ITAS Antonietti High School in Rome on black holes (at a library).

Guest speaker is Prof. Roberto Capuzzo Dolcetta, physicist

What is a Junior Science Café

Why organise a Junior Science Café? There's more than one reason!

- It highlights **students' individual attitudes** and their specific skills and competences;
- It makes **students collaborate and work together** in a shared project, fostering cooperation and collaboration
- It **makes science a more liveable and relatable topic**, which can be discussed with peers

What is a Junior Science Café

Junior Science Café can:

- Inform on where and **how scientific knowledge is produced**
- Teach **how to look for science-based information** and **discern reliable sources** from dubious/fake news
- **Tap into students' personal interests** to include them in their curriculum, making them useful and exploitable for education
- Contribute to **make science part of general knowledge**, rather than something just for “smart people”

What is a Junior Science Café

A Junior Science Café is also golden opportunity to:

- Do research
- Connect and relate different topics
- Analyse topics from different disciplines' point of view
- Introduce topics that are rarely discussed in school curricula
- Link with scientific experts, get to know them and the academic environment
- Study more in depth specific aspects of school subjects

Event Organisation

Junior Science Cafés focus on a specific topic: origin of the Universe, Ancient Roman society, or environmental sustainability.

Then, how do we choose the topic of interest?

The students choose the topic which they are interested in after some discussion and research



Event Organisation

The **research** consist in looking for which branches of science dealing with the chosen topic. For instance, if the topic is *anthropogenic environmental impact*, many branches of science analyse the phenomenon, disciplines even very different from each other.

Chemistry

Biology

Geography

History

Economy

Event Organisation

Then the students decide who takes which **role in the organisation of the event**. Firstly, the different roles are presented in their responsibilities:

- Host
- Guest speakers

- Poster
- Event material
- Agenda

- Location
- Location Setup
- Equipment
- Catering

- Communication
- Blog
- Photo & Video

Event Organisation

- **Host:** moderates the event
- **Guest speakers:** liaises with the guest speakers and is the event's point of contact for them

Event Organisation

- **Poster:** is responsible for the event poster's graphics and its production
- **Event Material:** in consultation with the whole class, is responsible for the choice of the event's material, such as chosen texts to discuss during the event.
- **Agenda:** is responsible for drafting the agenda and the guest speakers' CV, circulating it and printing copies for the event.

Event Organisation

- **Location:** liaises with the event location
- **Location Setup:** is responsible for setting up the location for the event
- **Equipment:** is responsible for the technical equipment needed at the event
- **Catering:** is responsible for the catering of the event, deciding the menu and liaising with the catering company

Event Organisation

- **Communication:** is responsible for the promotion of the event and manages the distribution of the event material through the channels of the event
- **Blog:** manages the event's website/blog/social media channels/means of communication
- **Photo & Video:** is responsible for taking photos and shooting videos of the event and the post-production of such material

Guest Speakers

Once the topic is decided and framed, **how to choose the guest speakers?**

Firstly, the students need to **understand how the scientific community works:**

- how scientific papers are published
- the peer review system
- the referencing system
- how to recognize good and bad scientific papers and evaluate a CV

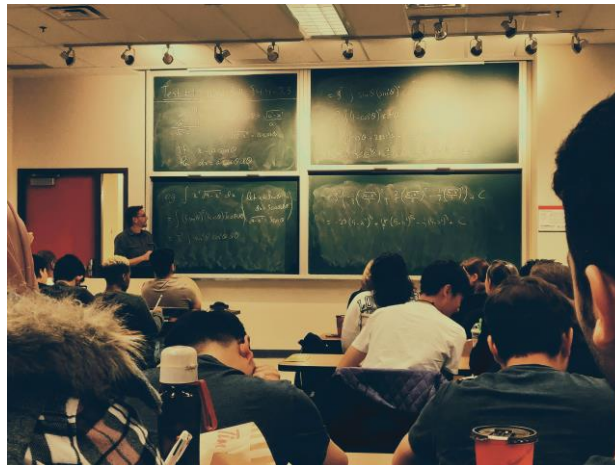
Guest Speakers

This process is meant to give an idea about where to look for when assessing a source of information, and how academia and scientific research is based on **objective and peer-reviewed knowledge**.

Guest Speakers

Once again, the students are divided in groups, each with the task of **looking for the guest speakers specialised on the specific field** chosen previously with the whole class.

It is useful to look for **local universities** and **research centres** that are well-established in the chosen field.



Guest Speakers

The guest speakers should be chosen according to the following criteria:

- **Scientific excellence:** the guests are *recognised scientists in their field*, not only experts, but with interesting and original perspectives of their field of expertise
- **Dissemination:** the guests should have *experience of directly disseminating their research*, specifically with the general public
- **Field expertise:** the guests' *expertise should be in line with the topic* and the perspective from which the students chose to analyse it

Guest Speakers

To follow these criteria, the **students must be guided in the review of a scientific CV**, teaching them how to evaluate:

- Amount and type of publications
- Topics of scientific publications
- Age, number of publications and academic carrier
- Specific competences

To be able to assess a proper evaluation, students must have a clear idea of how scientific research works

Guest Speakers

The groups reconvene together and each name 2 potential guests they identified through research and discussion.

The **whole class discusses and votes two final guests speakers**, then the Guest Speakers responsible will be in charge of contacting the speakers, liaising with them and keeping them updated of the event organisation.

Guest Speakers

Once the guest speakers are identified, the class proceeds with the **organisation of the preliminary meeting** with them.

This entails:

- Identification of the class's knowledge gaps in the event's topic
- Detailed research on the event topic
- Identification of a set of questions (approx. 10) for the guests

Guest Speakers

It is time to have the preliminary meeting with the guests!

It is important to meet the guests before the event, as it gives the chance to see **how the experts tackle the topic**, strong suits and soft spots of their research and expertise: these aspects are crucial to understand the direction of the discussion during the event.

Sounds like an job interview, does it?

Event material and Logistics

Needed materials need to be prepared in time for the event. Remember, Junior Science Cafés are events for the general public, not an actual scientific symposium!

Additional textual and visual content can help engage the audience and make the event memorable. The class can identify literary references, films, documentaries, artwork, even famous quotes dealing with the chosen topics.

This helps to visualise the actual link between science and culture, and how both influence each other.

Event material and Logistics

The additional event material can include:

- **Literature:** stories, novels, poetry, theatre plays, any literary production can be a great starting point from which to expand the discussion on the topic, besides highlighting how humanities and hard sciences are linked!
- **Scientific literature:** it can help to frame the topic for the guest speakers and clarify the topic to the audience

Event material and Logistics

- **Films:** it is interesting to see how cinema represents science. Movies can strengthen myths and misconceptions of a given phenomenon. It can be engaging for the audience to debunk myths and listen a professional do it!
- **Scientific documentaries:** they can introduce the topic to the audience quickly and clearly.
- **Online videos:** videos from social media are very popular among the youth. Including funny videos to the event shows the students' personal involvement.

Event material and Logistics

Organising a Junior Science Café comprises a few organisational feats, such as:

- **Location Setup:** the location must contribute to keeping the audience interested and engaged: cosy, informal, inclusive. Avoid setups with neat speaker/audience division, or seat layout that are dispersive and do not foster dialogue and audience involvement.
- **Equipment:** microphones, projectors, screens, computers: all the tools must be found, tried, rehearsed with prior the event.

Event material and Logistics

- **Catering:** food and beverages are an important aspect of the event, as they contribute to the cosy and informal environment of a Junior Science Café.
- **Communication:** It is crucial for the event's impact. Be sure to promote the event not only to schoolmates and parents, but also to the local community. Posters and flyers can be distributed physically (e.g. in cafeterias, local supermarket) and virtually through the many social media channels.

After the event

Once the event has ended, the audience could have their initial questions answered, but leaves with more questions than they came.

This is a “secret” objective of Junior Science Cafés: **encourage scientific curiosity**, getting the audience closer to science and **foster a healthy attitude to go deeper into things**.

After the event, the class must elaborate what they learned, identify their new questions on the topic, and perhaps, decide with the teacher to examine in depth a certain aspect.

After the event

A **Junior Science Café** is not necessarily the end of the path, but actually the beginning!

New perspectives may emerge from the experience, and **students must be given the time to assess their new knowledge** and the chance to **formulate new questions**.

Who knows: maybe it can even spark the interest of a lifetime, or change our point of view...We only need to try!

Thank you for your time!

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And now...let's organise a Scientific Cafè!

- Choose an interesting and relevant topic
- Select the two complementary disciplines/point of views you want to adopt to explain/analyse/discuss your topic
- Select the 2 experts according to their CVs, roles, publications
- Prepare an Agenda of the event
- Formulate the 10 questions for your experts
- Prepare the additional/introductory material (an article, a video, a picture, a poem, a song, etc.) and a short presentation to introduce the topic
- Think about food and beverages (typical from your country? linked to the topic?)