

SISSA



FOR SCHOOLS

Anno Scolastico 2021-2022

EVALUATION REPORT

Laura Busato, Valentina Mengarelli, Luca Papapietro
Francesca Rizzato, Paola Rodari

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1. EXECUTIVE SUMMARY

The school year 2021-22 has been the ninth year of *SISSA for schools* (S4S): a very successful programme known not only locally, but also outside the Friuli Venezia Giulia region, and appreciated by teachers, educators and pupils. The 2021-22 programme was developed with the usual structure but adapted to the regulations linked to the COVID pandemic, especially with regard to two main activities:

- The Thursday visits, when school classes were welcomed in SISSA, either virtually or in person depending on the pandemic situation.
- The Student Day, the special event dedicated to pupils of the last two years of High School that was offered online only.

Altogether, S4S 2021-2022 involved a total amount of approximately 1100 pupils.

As usual, the activities were proposed and led by SISSA PhD students, researchers and administrative staff (approximately 100 people) with the support and the organisation of SISSA Medialab that developed the general format of the activities in which PhD contributions were framed.

In order to widen the access to S4S's activities, this year we also started a spin-off programme called *SISSA for Schools va in classe* (*SISSA for Schools goes into the classroom*) devoted to reaching High School pupils of the region. This programme aims at offering the activities to schools outside Trieste that can face more difficulties to join the usual S4S programme.

SISSA for schools is a member of EUCUNET, the international network of Children's Universities.

1.1 Objectives

S4S seeks to promote SISSA, its international status and the very high quality of its research to the younger generation, especially to kids and teenagers living in the Friuli Venezia Giulia Region. S4S aims at showing young people, from a very young age, how research is really produced and managed at SISSA, through its scientists, technicians and administrative staff, thus offering a realistic picture of what science and scientists' life really is.

S4S objectives, from the very first year of the programme, can be summarised as follows:

Get support. The scientific community cannot operate without the support of society, which provides direct financing, or indirectly, legislation that facilitates scientific and technological research.

Gain trust. In the absence of an attitude of trust in the scientific community, both facts and figures may be challenged by large groups of citizens, including policymakers. Gaining trust and being considered reliable partners require a careful and continuous communication commitment.

Improve governance. There are complex and controversial issues on which citizens are called to decide upon together with policy makers, stakeholders and the scientific community (see, e.g., energy problems or some health issues). The scientific community must find ways to communicate with all members of society because their motions and knowledge have a say in the governance of science and technology. Young people are the adults of tomorrow, and it is necessary to build a new and more aware concept of citizenship.

Support recruitment. Communicating science is also necessary to create a positive image of scientists as professionals, to attract new generations of researchers.

Foster information and education. Providing information on current scientific research, but also providing a scientific perspective on the news, and contributing to scientific education of the young are the most universally known goals of science communication. In addition, education is not just about knowledge transfer, but also about the construction of a scientific citizenship able to raise awareness on the importance of engaging in behaviour, both public and private, of sustainable progress and of respect for the environment.

Fight prejudices and change stereotypes. Scientists are usually imagined and drawn by children and pupils as crazy men, often old, who manipulate dangerous chemical substances which explode very easily. Sometimes scientists are considered good, in some cases even superheroes, but sometimes they are perceived as evil characters. The direct contact with real scientists during SISSA for schools seeks to change this stereotype: after the visit children know that scientists are both males and females, they can be young, they are friendly and not crazy. Most of them do not use chemicals, but numbers, graphs, models and computers during their daily routines.

Promote a sense of ownership for science-related places such as universities and research institute. Children and young people sometimes feel uncomfortable when thinking of scientists and places where science is done, such as universities and museums. They feel like such places are dedicated to expert adults and closed to them (and possibly their families and friends too). With this programme SISSA aims at becoming a welcoming and open institution for all.

Summarising all these objectives in a mission, S4S mission is to **support the development of a scientific citizenship for all**, not just to promote scientific careers among young children.

We present science as a vital, useful, beautiful human activity, made by many passionate, intelligent, professional young women and men coming from many different countries. And a fundamental and powerful tool for a socially and environmentally sustainable development.

2. OVERVIEW OF THE INITIATIVE

To cope with the uncertainties due to the pandemic, S4S in 2021-2022 was split in two periods: October 2021-February 2022 and March-May 2022, the first for online meetings only, the second for in-person visits, if the pandemic situation was favourable.

Due to the pandemic situation, a valid COVID-19 Green Pass was required when entering the SISSA's building for most of the year; in order to be inclusive with the pupils without a valid certificate of vaccination we offered online meetings until the month of March 2022. Starting from March we were finally able to host again some of the school visits in person (6 in total).

The registration procedures for the two periods of the year took place respectively in June and November 2021 and were advertised via the [SISSA for Schools newsletter](#) and via social media. In both selection processes, we received about 90 requests, for respectively 14 and 11 available slots. The slots were filled within a few hours after the opening of the call, as it happens every year: requests are much higher than S4S possibility to answer them. We accepted classes from different schools and grades, from the first year of Primary School to the fifth year of High School.

Beyond regular school visits we proposed the seventh edition of the *Student Day*, the second to be held in a digital format: it took place on February 25th on Zoom, giving more than 500 pupils in their final years of High School the opportunity to participate in a whole morning of activities specifically designed for them.

It is very important to underline that the S4S programme would not be possible without the collaboration of many PhD students, post-docs, administrative and technical staff and senior scientists. About 100 guides, speakers and explainers took part in the 2021-2022 school visits activities. The scientific secretariat, as well

as other areas' secretaries and the IT staff made an invaluable contribution to our public engagement activities.

2.1 Thursday's school visits

As usual all Thursday mornings from 21 October 2021 to 26 May 2022 were dedicated to school activities. Each morning only one class is allowed to participate, so as to offer a deep and personal experience to pupils. Exceptions are made for classes coming on the same school trip.

S4S young visitors belonged to schools of Trieste and outside town: within the Friuli Venezia Giulia region (Udine, Cervignano, Pordenone, Sagrado) and outside of the region (Modena).

Pupils of all ages took part in the Thursday programme, from very small children in their first year of Primary School to pupils attending the last year of High School. In particular, this year we hosted: 7 Primary School classes (4 in-person, 3 in remote), 7 Junior High School classes (all in remote), and 11 High School classes (2 in-person 9 in remote) (Tab. 1). We generally accommodated one school class at a time to ensure a deeper exchange between pupils and volunteers during activities.

38 volunteers collaborated to the Thursday events.

S4S – Digital Edition

The programme of the digital version of the visit was the following:

- Brief introduction to SISSA, a welcome video of the SISSA Director, Andrea Romanino, and a quick presentation of the programme
- Interactive game “Guess who – SISSA Edition”
- Interactive activity proposed by a SISSA volunteer
- Question time.

The activities were adapted to the age of the pupils:

- I-II Primary School (6-8 year old): extremely interactive activities including many games and presented with a very simple language
- III-V Primary School (8-11 year old): interactive activities, more specialised language and more demanding tasks
- I-III Junior High School (11-14 year old): interactive activities and short seminars.
- I-V High School (14–18 year old): participatory and interactive long seminars.

The game “Guess who – SISSA Edition”

The objective of the game is to fight the stereotypes regarding disciplines and scientists. Pupils are asked to guess the correct match between four S4S volunteers (who are not presented in advance) and four research topics. Each volunteer is introduced with name, age, nationality, portrait picture and two clues (Fig. 1): one is not related to the job (i.e. “I like chocolate”, “My favourite film is ...”) and the second one related to his/her job. Once the pupils guess a correct match, the guessed volunteer switches on the camera and discusses a little bit more about his/her job. Then, the pupils are free to ask questions, also about everyday life or career paths. It is a moment of interaction and fun, because pupils, especially the younger ones, are really curious, and the game sometimes lasts 30/40 minutes.

Guess who?
Sissa - Edition



Age
Nationality
Two clues

<p>Cellular biology</p> <p>I study neurons and their electrical impulses.</p>	<p>Theoretical physics</p> <p>I studied light-matter interaction but I had a couple of intuitions about electrodynamics and gravity too.</p>
<p>Cellular neurobiology</p> <p>I grow cells and tissues derived from the nervous system in an artificial environment.</p>	<p>Cosmology and astrophysics</p> <p>I study computer simulations of powerful plasma jets generated by black holes.</p>

Figure 1: Example of the “Guess-who” game.

S4S – In-person visits

The programme of the in-person visits is the following:

- Welcome the class at the SISSA gate and walk to the main entrance with a first overview of SISSA’s campus.
- Introduction to SISSA and its community in the Big Meeting Room, the most prestigious room of SISSA with a wonderful view of the city and the sea. The introduction included a welcome video of the SISSA Director, Andrea Romanino, and a quick presentation of the programme.
- Interactive activity proposed by a SISSA volunteer.
- Snack-break in the garden with playful experiences from optical illusions to sound games.
- Escape game (for Primary and Junior High Schools) or SISSA tour with PhD students (for High Schools).
- Feedback time and closure

The Escape Game

Main purpose of the game is to allow pupils to get around SISSA in small groups and discover the research centre in wider autonomy. Each small group is accompanied by a researcher and gets in touch with a variety of actors in the research centre community, also discovering a few key places.

The SISSA Escape Game was co-created with S4S volunteers in 2019: all volunteers were invited to take part in the process and five of them actively participated in all stages of the game design and construction. SISSA Escape Game was proposed to both Primary and Junior High School classes in three versions, so to adapt challenges to the different ages of the pupils. The game is generally enjoyed both by the volunteers and the school pupils, for whom it is often one of the most memorable parts of the visit.

The game tells the story of Lucia, a PhD student in biophysics who is about to lose all her data and research because her computer is overheating. She needs new fans and the pupils can help in the search.

3, 2, 1... a Caesar cipher to understand where to find a bag closed by two padlocks, one with a combination of three numbers and one with a key, and the envelope containing all the puzzles to solve to open it (Fig. 2). Offices, stairs, the exhibition on the sixth floor, the search for a scientist willing to help, the canteen: a physical path through SISSA implies the knowledge of its different departments, offices and people. Once they have recovered the correct combination and the key to open the bag, the group achieves the goal: a fan for Lucia and her thank-you note.



Figure 2 - Materials for the Escape Game used for Primary and Junior High School pupils.

2.2 Student Day

The 2022 edition of SISSA Student Day – Digital Edition was organised on February the 25th. Aim of the event to give pupils in their final years of High School a glimpse of the life and work of the scientists presenting at the same time cutting edge research themes. The effect is to foster interest for scientific careers but also, in a more general sense, to promote a full scientific citizenship for all. In order to reach these goal the Student Day has been designed to include a wide range of seminars, demonstrations, interactive lectures, virtual laboratory visits, discussions, and interviews with researchers.

During the event, regular activities were suspended and all SISSA was entirely (also if virtually) at the pupils' disposal. Nearly 570 pupils participated and could freely select among **24 different activities** such as seminars, interviews, virtual labs, quizzes and other informal activities on the interaction between science and society. The Student Day programme is available [here](#).

Nearly **90 people** from the SISSA staff, including PhD students, young and senior scientists, laboratory and IT technicians participated in this year's event. The event was organised by SISSA Medialab with the support of the communication office, scientific and executive secretariat and the IT staff.

For more detailed information, see the full report available on request.

Table 1. School visits in numbers 2021-2022

Digital visits on Thursday	
Number of visits	17 (originally 18 but one cancelled last minute because of the COVID emergency)
Pupils	442
Schools	13
Classes	19
In person visits on Thursday	
Number of visits	6 (originally 7 but one cancelled last minute because of the COVID emergency)
Pupils	121
Schools	4
Classes	6
Student Day	
Pupils	569
Classes	29
Activities proposed	24
Total number of pupils involved	1132
SISSA volunteers involved	102

2.3 SISSA volunteers' recruitment and participation

The school programme is strongly based on the active participation of SISSA PhD students and post-docs, but also of several senior researchers and technical staff. The interaction between SISSA volunteers and school pupils bring benefits to both sides, as visitors learn more about the life and research topics of scientists, while giving the latter the opportunity to improve their presentation and communication skills, as well as the satisfaction of sharing their passion with a very interested audience.

In October, at the beginning of the school year, a first meeting was organised and advertised to all SISSA students and staff in a meeting attended by the SISSA's Director, SISSA Medialab staff, and the PhD representatives. During this hybrid meeting, held both in person in a SISSA room and in remote, Medialab's staff presented the S4S programme and some of the volunteers in the previous year shared their experience. Approximately 50 people took part in the meeting, between in-person and online.

SISSA Medialab provided continuous organisational support, as well as professional assistance in preparing seminars, activities and supporting materials.

2.4 Training in science communication for researchers involved in the programme

In order to empower and train the volunteers who participate in both the traditional SISSA for Schools and other outreach programmes, an internal free training course was held, attended on a voluntary basis. The course, **involving a total of 42 PhD students, postdocs and researchers**, included the following modules:

- 29/11/2021 Introduction to science communication (Group 1);
- 02/12/2021 Introduction to science communication (Group 2);
- 08/04/2022 Discussion games to address controversial issues with the public;
- 22/04/2022 Present your research in various contexts;
- 02/05/2022 The use of objects and easy experiments in events in presence with various audiences.

NB: the course was held in English or with an English translation to allow non-Italians to participate.

2.5 Products

The S4S archive of activities is continuously increasing and several new materials such as powerpoint presentations, schemes for interactive seminars, simple experiments, demonstrations, etc. have been added to those created during the previous years (see Appendix 3).

2.6 Main results

S4S and S4S – Digital Edition 2021-2022 confirmed the success of previous years. The format of activities as well as organisation features were very appreciated and the impact on participants, both pupils and volunteers, was explicitly mentioned as deep and memorable. These results suggest that, even though part of the program has been moved online due to the COVID-19 emergency, the interest of schools has not diminished (see §3 for a more detailed evaluation).

We kept the same effective booking procedure used last year for the two registrations. On the 3rd of June and on the 11th of November we alerted teachers registered to our mailing-list that the booking would have opened respectively on June 10th and November 18th at 6:00 pm. On those days a reminder was sent, and the online form was opened. The available slots were filled up in a few hours and we received almost **180 requests for a total of 177 classes and about 3240 pupils**.

The selection was made based on the time of booking, but also considering other aspects: previous participation by the same classes (priority was given to pupils who have never taken part in the visits), a balanced participation of different school-types, grades, and geographical regions. It ended up with the selection of **25 classes (18 on-line, 7 in person)**. Due to the COVID-19 pandemic situation two classes could not participate. The final numbers count **563 visitors** for the 23 (originally 25) days of visits.

The activities of S4S are marked by their inclusive and participatory nature and are considered among international best practices. The success of S4S is due to many factors. First, to the consistency and strength of the message, and to the clear objectives that have been pursued since the beginning (2011). Furthermore, the professionals who run the programme have developed specific skills that are almost unique in Italy and give a significant added value. Finally, the relationship of trust that has been built up over the years, both with internal volunteers and with teachers and educators, facilitates management and sometimes makes it possible to expand the fields of intervention to potentially controversial issues.

3. EVALUATION

The evaluation of the S4S programme was carried out with teachers, pupils and researchers by collecting data through two main instruments:

1. questionnaires for teachers, Junior High School and High School pupils;
2. free messages and drawings on a virtual board (Padlet) for Primary School pupils.

The questionnaires were composed of a series of open questions and a quantitative scoring system from 1 (lowest) to 4 (highest) on various aspects of the visits. The scores are:

1 = very bad

2 = not so good

3 = good

4 = very good

A fifth score (corresponding to neither a positive nor a negative evaluation) was deliberately avoided to force the polarisation of the judgments away from the median.

Qualitative considerations were collected from teachers and pupils directly during the visit or immediately after, and were always very positive, often enthusiastic. The overall impression is that this experience has been very positive for everybody. The results of the questionnaires confirm this impression.

Overall, we observe a high level of satisfaction in teachers, pupils and SISSA volunteers.

The features that received the highest scores from the classes (teachers + students) are the interest in the covered topics and the skills and charisma of SISSA's volunteers.

We have also observed that both teachers and pupils gave higher scores during in-person meetings with respect to online ones, even if both situations received positive scores. Volunteers' comments confirm the preference for in-person interaction with pupils and teachers. See details in next paragraphs.

3.1 S4S – Teachers' evaluation

The questionnaire was sent through a Google Form link to teachers at the end of each visit and it is overall very positive. 15 teachers answered (out of 17 online events).

The fact that the same teachers booked one or more visits for the next year or recommended the visit to colleagues are clear signs of appreciation which goes far beyond the specific answers to the questions. Very positive were also the evaluations given by many teachers in informal emails after the visits.

Teachers' evaluation on the digital edition

The questionnaire is presented in the following Box.

EVALUATION QUESTIONNAIRE FOR TEACHERS

Dear teacher,

Thank you for having participated in SISSA for Schools Digital Edition. We ask you just a few minutes of your time. We would like to know what you think about this activity. Thank you for your availability.

1. Which program did you take part in?

- Primary School
- Junior High School
- High School

2. Rate from 1 (very bad) to 4 (very good) the following aspects:

- Interest
- Relevance for the school program
- Enjoyment
- Appropriateness to the age and knowledge of the students
- Skill and charisma of SISSA students and speakers
- Interactivity
- Accuracy of the organisation

3. What was the best element?

4. What was the worst element?

5. If you already participated in the S4S program, how do you see the comparison between that version and the digital?

6. Would you participate if the visits were in English?

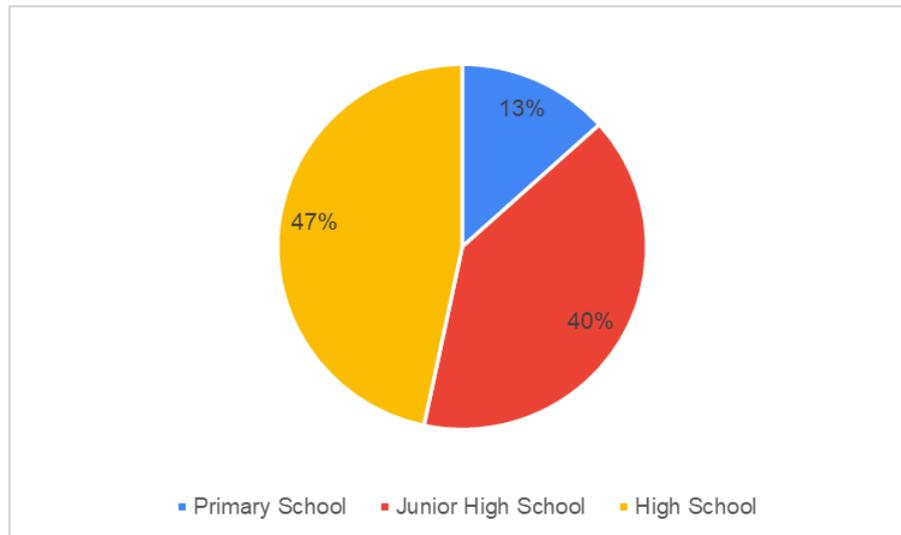
7. Would you involve other classes in this digital version?

8. Suggestion and comments.

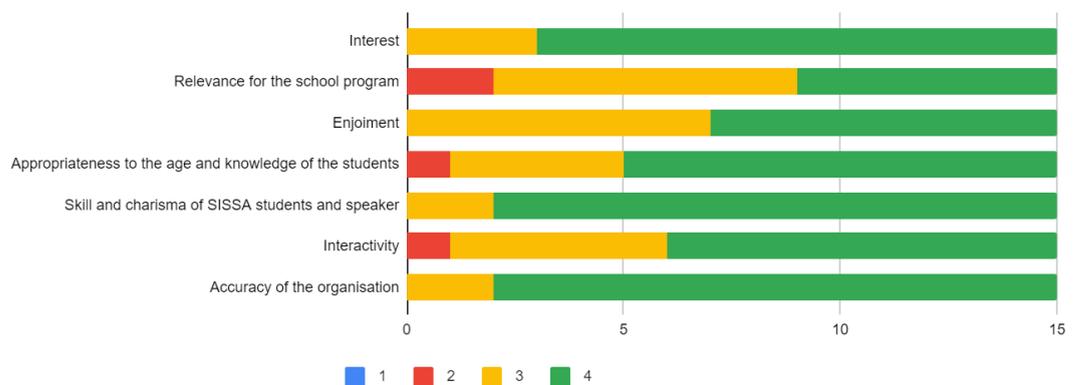
Thank you!

Results

1. Which programme did you take part in? (N=15)



2. Rate from 1 (very bad) to 4 (very good) the following aspects: (N=15)



	# of votant teachers	Average rating
Interest	15	3,8/4
Relevance to schools' program	15	3,3/4
Enjoyment	15	3,5/4
Appropriateness to the age and the knowledge of the students	15	3,6/4
Skill and charisma of SISSA students	15	3,9/4
Interactivity	15	3,5/4
Accuracy of the organisation	15	3,9/4

3. What was the best element?

- o La conferenza e le testimonianze dei ricercatori.
- o Attività di gioco.
- o La gentilezza e la disponibilità dei relatori a rispondere alle domande più disparate degli alunni. Inoltre l'attività era ben pianificata.
- o L'ottima organizzazione, la possibilità di contatto con i ricercatori e la loro disponibilità.
- o Il fatto che i relatori parlassero un linguaggio comprensibile dagli studenti e che la lezione non fosse frontale ma dialogata.
- o Interaction.
- o La capacità comunicativa del relatore.
- o L'interazione con i relatori. Penso sia una grande opportunità per le bambine e i bambini conoscere (anche se virtualmente) ricercatori e ricercatrici. Sono stati in grado di coinvolgere gli alunni, facendo conoscere loro delle discipline nuove. Sono stati tutti disponibili ad ascoltare e rispondere alle domande della classe.
- o La visione di volti giovani molto preparati e appassionati.
- o La modalità di interazione adeguata al contesto e le tematiche affrontate. I ragazzi hanno seguito con grande interesse e partecipazione.
- o La capacità di coinvolgere i ragazzi.
- o La capacità della moderatrice dell'evento di stimolare gli alunni alla discussione.
- o Il contenuto scientifico che può stimolare gli allievi.
- o Ho apprezzato l'interazione con gli studenti e le proposte per farli interagire soprattutto presentando in modo originale alcuni degli studiosi della SISSA e i loro ambiti di studio e coinvolgendo gli studenti in modo continuativo.
- o L'argomento curioso e ben trattato.

4. What was the worst element?

- o La visita alla struttura dal vivo è tutta un'altra cosa.
- o Argomento un po' difficile per l'età a cui è stato proposto.
- o Indovina chi.
- o La classe è stata molto contenta dell'attività, considerando che l'abbiamo svolta online!
- o La modalità di trattamento dell'argomento specifico troppo simile a una lezione.
- o Il fatto di sapere solo poco tempo prima l'argomento dell'attività proposta.
- o Non ho osservazioni sull'organizzazione né sulla performance degli organizzatori e ricercatori della SISSA, ma sono un po' delusa e anche sorpresa dall'atteggiamento dimostrato dagli alunni, poco partecipe e non sempre rispettoso.
- o Niente in particolare.
- o Il fatto di non poter svolgere l'attività in presenza ha reso un po' faticosa l'organizzazione in particolare dell'attività preparatoria legata al gioco "Quantum race".

5. If you already participated in the S4S program, how do you see the comparison between that version and this digital?

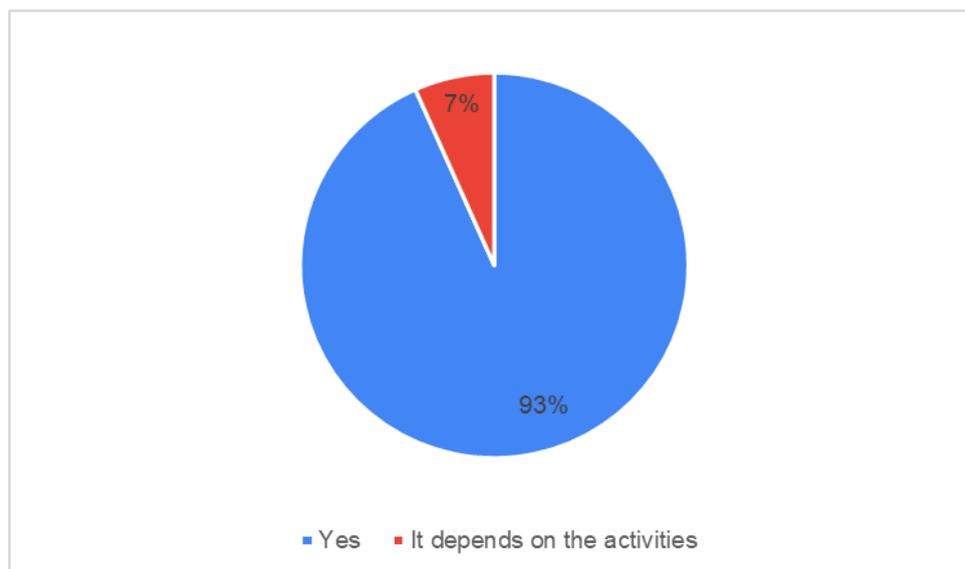
- o Come ho detto al punto precedente, la visita in presenza della struttura è sicuramente di maggior impatto per gli studenti.
- o L'organizzazione è ottima, ma resta sempre preferibile la versione classica in presenza.
- o Direi che non c'è paragone... la visita di persona è molto più coinvolgente.
- o Meglio quella dal vivo... ma l'organizzazione digitale è molto ben fatta.
- o Sicuramente vedere in presenza l'ambiente SISSA ha tutto un altro impatto.
- o La versione digitale ovviamente non ha il piacere della visita reale, però è sicuramente più comoda e più realizzabile: la mia classe di oggi (25 studenti) avrebbe richiesto due bus e due accompagnatori, molto complicato.

- o È chiaramente preferibile la versione in presenza.
- o Sicuramente venire direttamente è un'altra cosa.

6. Would you participate if the visits were in English? (only High Schools, so N=7)

5 teachers out of the 7 from High Schools answering the form said that they would participate even if the visits were in English.

7. Would you involve other classes in this digital version? (N=15)



8. Suggestions and comments

- o Una parte in inglese potrebbe andare, ma non integralmente in quanto escluderebbe gli studenti più deboli.
- o Complimenti allo staff! E grazie per la pazienza.
- o In riferimento all'ultima domanda: penso potrebbero svolgere un incontro in lingua inglese se fosse svolto in presenza. La maggior parte non ha un livello di competenza linguistica tale da comprendere un intero discorso. Tuttavia in presenza e con un'attività di tipo interattivo penso possa essere una bella esperienza.
- o Eccellente attività per l'orientamento.
- o Solo una richiesta: quando si fa la prenotazione a settembre si fa senza conoscere l'argomento e bisogna scegliere la classe, e io in genere scelgo di far partecipare le seconde. L'argomento di oggi invece sarebbe stato più adatto ad una terza: forse sarebbe più utile didatticamente, se possibile, poter scegliere l'argomento (fisica, matematica, neuroscienze).
- o Si potrebbe forse prevedere di coordinare l'attività in maniera che in una o più lezioni precedenti all'incontro gli alunni vengano in parte preparati dall'insegnante a ciò che ascolteranno. L'ideale sarebbe inserire l'incontro nella programmazione didattica della classe (forse chiedo troppo); in questo modo la classe potrebbe partecipare con più cognizione di causa, forse più entusiasmo. Di certo l'attività, svolta forzatamente a distanza per motivi sanitari, perdipiù con alcuni alunni che hanno partecipato da casa e solo per metà incontro, sarebbe stata più d'impatto se fosse stata organizzata dal vivo.
- o Nel caso le attività dovessero svolgersi a distanza e vi fosse la necessità di far conoscere un gioco o un'attività specifica, suggerisco di pensare all'opportunità di mandare uno degli organizzatori presso la scuola per far conoscere direttamente agli studenti tale attività, coadiuvato da un docente.

Teachers' evaluation on in-person school visits

The questionnaire is presented in the following Box.

EVALUATION QUESTIONNAIRE FOR TEACHERS

Dear teacher,

Thank you for having participated in SISSA for Schools. We ask you just a few minutes of your time. We would like to know what you think about this activity. Thank you for your availability.

1. Which programme did you take part in?

- Primary School
- Junior High School
- High School

2. Rate from 1 (very bad) to 4 (very good) the following aspects:

- Interest
- Relevance for the school program
- Enjoyment
- Appropriateness to the age and knowledge of the students
- Skill and charisma of SISSA students and speakers
- Interactivity
- Accuracy of the organisation

3. What was the best element?

4. What was the worst element?

5. Would you involve other classes in this activity?

6. Would you participate if the visits were in English?

7. Suggestion and comments.

Thank you!

The number of teachers present at in-person activities is not large enough to make statistics (2 High School and 3 Primary School teachers).

However, the scores reported in the second question are extremely positive (4 in all categories and only one 3).

Below are some comments on the activity:

3. What was the best element?

- o La disponibilità di tutto lo staff e dei ricercatori. L'onore di esser stati accolti dal Direttore in persona.
- o La spontaneità e l'entusiasmo di chi ci ha accolto.
- o L'accoglienza, l'organizzazione e il modo di coinvolgere i bambini.
- o L'accoglienza, l'organizzazione delle attività, la cordialità del personale.
- o La disponibilità nell'organizzazione della visita. La capacità dei relatori di interagire con gli alunni sia in situazione strutturata (attività), sia non strutturata (momento della pausa).

4. What was the worst element?

- o Nulla! Era da anni che non partecipavo a un evento così interessante e ben organizzato.

7. Suggestions and comments.

- o Spero di poter partecipare ancora a questi eventi, perché gli studenti hanno apprezzato moltissimo (e pure noi docenti!). Ancora grazie!
- o Grazie di tutto.

3.2 Pupils' evaluation

Two different types of evaluation were proposed to visiting pupils: an informal one for Primary School children and questionnaires for Junior High School and High School.

Pupils' evaluation: Primary Schools

Children from Primary Schools participated both in person and on-line.

At the end of the visit, we sent a digital board where children are asked to leave a message or to express their experience in drawings. During in-person visits, we allowed some time at the end of the visit to make a drawing and we collected them directly. In in-person meetings, we also gave children the possibility to prepare and deliver the drawing to one (or more) of the volunteers who welcomed them during the visit. This very special sign of gratitude is much appreciated by volunteers and they are often surprised and happy to take the drawings with them and hang them in their offices.

A selection of drawings and messages received from Primary School children follows below.

ARCO-BALENO

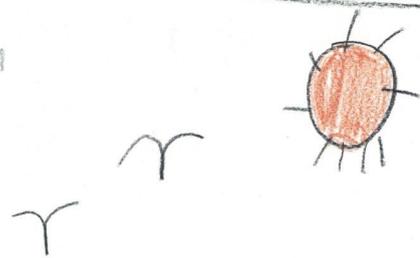
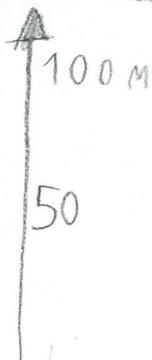


VA GABRIELE PER LA SISSA

LO SPAZIO CON LE STELLE



BUCHE ALTI



GIORNATA SULLO CIELO STELLATO SPAZIO



SISTEMA SOLARE



FORSE NON FATTO BENE PER LA SISSA

DA MATILDE PER LA SISSA



GRAZIE MILLE A TUTTI VOI

SISSA for Sheds



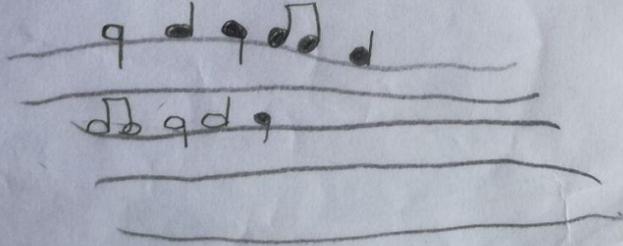
A ME È MOLTO PIACIUTO E ANCHE ERA MOLTO INTERESANTE
PUI INTERESANTE ERA INDOVINARLE PERSONE



 MARTA 30 ANNI	<input checked="" type="checkbox"/> MAIC <input type="checkbox"/> NATURA D FISIQA
--	---

Valerio

 MARTINO	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
--	---



Ciao signori della Sissa io sono Mayerka, oggi mi è piaciuto la vostra conoscenza, mi è stato anche un po' difficile capire certe cose, ma grazie a voi (Valentina, Francesca, Matteo, Elena, Martino e Maria) ho imparato molte cose sulla vita.
 (È un grande saluto da Mayerka)



A ME È PIACIUTO QUELLO DELLA MATEMATICA E DELLA MUSICA.

Dario Galassi

GRAZIE È STATO BELLISSIMO

S → SCUOLA
 I → INTERNAZIONALE
 S → SUPERIORE
 S → STUDI
 A → AVANZATI

☀️ ☁️ ☁️ 🎵 🎵 🎵

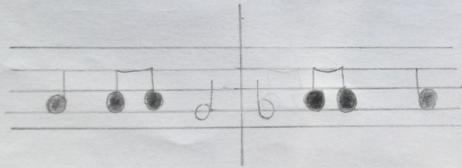
(|)

Grazie, per averci insegnato tante cose e per averci fatto fare il nastro di Mercurio, non conoscerò gli stagni quantitativi.



Grazie per averci spiegato queste cose e grazie per il tempo che ci avete dato. Quello che ci avete spiegato è stato interessante e mi è piaciuto molto la geometria. Ti ringrazio di cuore.

Zomoro



Grazie di questo bel giorno e della felicità che mi avete donata.

È stato un giorno indimenticabile.

Vi saluto da tutto l' cuore.

Io sono Emanuele. Grazie.

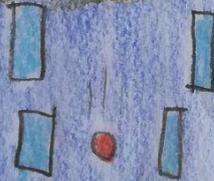


Scuola.
Internazionale.
Superiore
Studio
concerto.

A ME È PIACUTA LA PARTE DELLA SPECULIARITÀ
 È IN MUSICA E IN GEOMETRIA, E DEGLI
 SEGNI QUANTITATIVI.



GRAZIE:
 MATTEO,
 ELENA,
 MARTINO,
 MARIA,
 VALENTINA,
 FRANCESCA.



S VOLA
 I NTEONAZIONALE
 S UPERIORE
 S STUDIO
 A NANTATO

Giorno Baranatti

Pupils' evaluation: Junior High Schools and High Schools digital edition

The questionnaires were made available through a Google Form. The questionnaire for pupils was structured as in the following BOX.

170 pupils answered the questionnaire.

EVALUATION QUESTIONNAIRE FOR PUPILS

Dear pupil,

Thank you for participating in SISSA for Schools Digital Edition. We ask you for a few minutes of your time. In fact, we would like to know what you think of the activity. There is also a space for comments and suggestions that you can use to add something more personal if you wish. Thank you for your time.

1. Which programme did you take part in?

- Junior High School
- High School

2. Rate from 1 (very bad) to 4 (very good) the following aspects:

- Interactivity
- Interaction with the researcher
- "Guess who - SISSA Edition"
- Skill and charisma of SISSA students and speakers
- Interest
- Enjoyment
- I learned new things
- It made me want to learn more about science

3. What was the thing you liked the most?

4. What was the thing you liked the least?

5. Would you like to repeat this experience with other researchers?

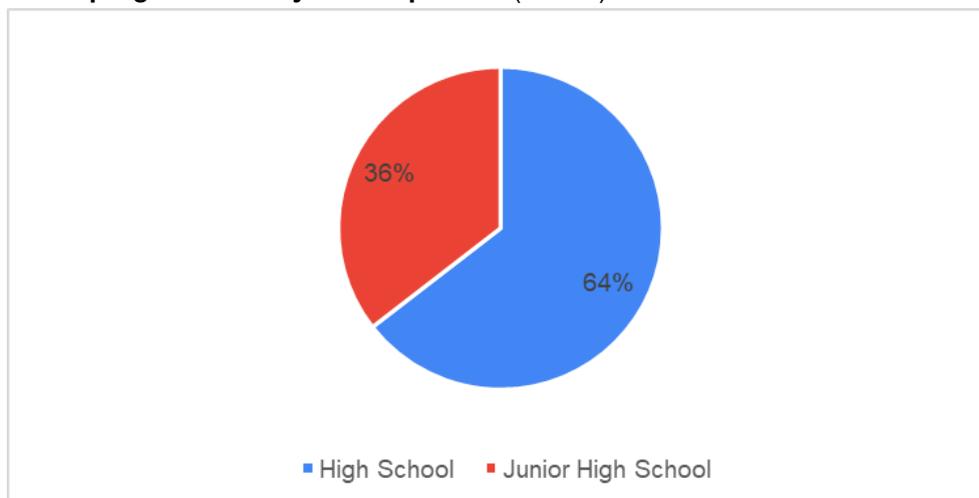
6. Are you willing to participate in meetings in English?

7. Suggestions and comments.

Thank you!

Results

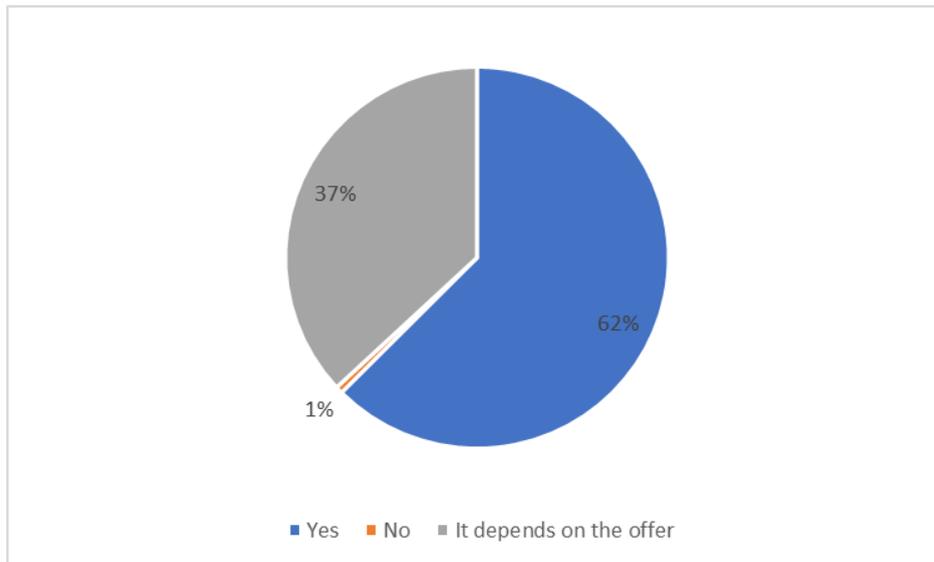
1. Which programme did you take part in? (N=170)



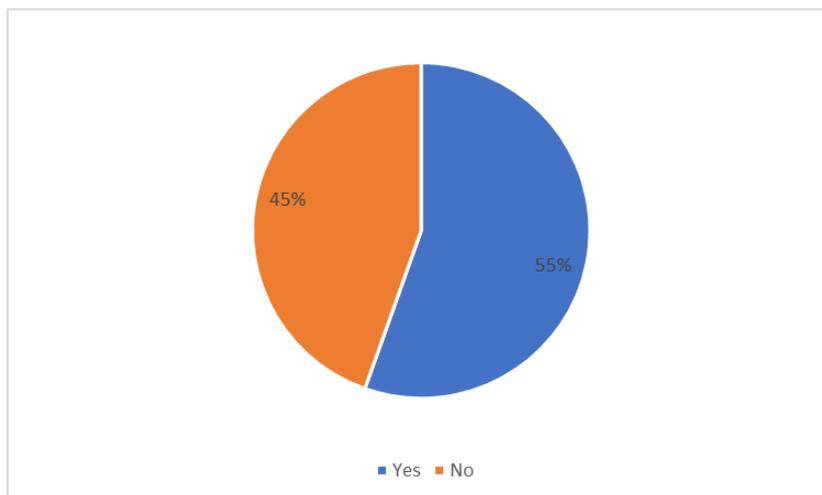
2. Rate from 1 (very bad) to 4 (very good) the following aspects: (N=170)

	1	2	3	4	# participants	Average rating
Interactivity	2	29	73	66	170	3,2/4
Interaction with the researcher	5	26	58	81	170	3,3/4
“Guess who – Sissa Edition”	2	31	65	72	170	3,2/4
Skill and charisma of SISSA students and speakers	0	10	54	106	170	3,6/4
Interest	4	26	66	74	170	3,2/4
Enjoyment	5	37	84	44	170	3,0/4
I learned new things	1	21	54	94	170	3,4/4
It made me want to learn more about science	17	48	53	52	170	2,8/4

5. Would you like to repeat this experience with other researchers? (N=168)



6. Are you willing to participate in meetings in English? (N=166)



7. Suggestions and comments.

- Dovreste fare parlare di più il ricercatore tedesco.
- Tutto ok.
- Incontro piacevole, leggero, interessante, coinvolgente.
- Fare più giochi che però comunque riguardino l'argomento facendo diventare la lezione più interattiva e con più studenti interessati che partecipano facendo alla fine di ogni argomento un giochetto.
- Fare magari un giochetto alla fine di ogni argomento.
- Tutto sommato molto carina come cosa.
- Secondo me sarebbe bello se gli argomenti fossero un pò più facili da comprendere.
- Purtroppo ero in dad e non si sentiva bene.

- Il mio suggerimento sarebbe che magari con un tampone o qualcosa anche se col covid si potrebbe capire di più se magari venissimo noi direttamente nei vari laboratori, anche perché in collegamento non si capiva tutto a causa di problemi di rete. Però è stata una bella esperienza soprattutto quando salti le ore di scuola.
- Non si capiva molto il linguaggio, c'erano molte parole di cui non sapevo il significato.
- Consiglierei di fare il gioco alla fine e il power point all'inizio per motivi di concentrazione.
- Secondo me si dovrebbe fare che prima c'è la parte teorica cioè quella un po' più noiosa perché gli alunni sono più attenti e svegli e poi verso la fine la parte dei giochi.
- La didattica a distanza non permetteva di interagire bene con i ricercatori.
- Magari qualche piccolo filmato oltre al PowerPoint.
- Nulla penso sia stato tutto molto bello e soprattutto esaustivo.
- Secondo me è stato davvero interessante e divertente poiché ho scoperto ed ho imparato cose nuove, quindi veramente un ottimo progetto.
- Aggiungere qualche video.
- Si potrebbero lasciare le mail anche degli altri ricercatori (se disponibili a rispondere) in caso di curiosità varie.
- Durante la presentazione magari inserire video o filmati esplicativi o che aiutano a comprendere meglio l'argomento.
- Possibilità di scegliere il ricercatore con cui approfondire l'argomento nella seconda parte dell'incontro.
- Vorrei partecipare a più incontri con i ricercatori della SISSA (magari anche in lingua inglese), e magari approfondire anche in altri ambiti (ad esempio quelli visti nel gioco "Soliti ignoti SISSA edition, come la fisica della materia condensata o la neurobiologia).
- Bella esperienza, complimenti ai ricercatori per come hanno esposto.
- Ho apprezzato moltissimo l'incontro e gli interventi dei relatori, ho trovato gli argomenti molto interessanti, tuttavia la loro complessità e distanza dal mio immaginario mi hanno reso difficile seguire e capire completamente i discorsi dei ricercatori.
- Il dottorato di ricerca è una realtà ancora molto distante nel tempo per me, l'intervento però è stato molto interessante ed efficace nel mettermi a conoscenza della possibilità di prolungare gli studi dopo la laurea con un dottorato.
- Darei più spazio alla biologia.
- Secondo me si poteva approfondire la lezione sui marziani siccome sono interessato.
- Mi è piaciuta molto questa esperienza.
- Mi è piaciuto molto tutto inoltre ho scoperto tantissime cose nuove.
- Secondo me sarebbe stato meglio fare questa esperienza in presenza.
- Migliorare gli argomenti per noi ragazzi.
- Mi è piaciuto tanto e spero di rifarlo anche un'altra volta.
- È stata un'esperienza molto interessante, che ha risposto a molte mie domande, e mi ha fatto anche scoprire cose nuove.
- Coinvolgimento.
- Sarebbe stato molto più bello e coinvolgente se fatto in presenza.
- Mi è piaciuta la lezione anche se alcune informazioni potevano essere più specifiche.
- Fare delle domande dopo aver spiegato o parlato di un argomento.
- Non lo so.
- Ottimo tutto, bello il gioco, veramente una bella esperienza.
- Si potrebbero fare più test.

Pupils' evaluation: Junior High Schools and High Schools in-person

The questionnaires were made available through a Google Form. The questionnaire for pupils was composed as in the following BOX.

Only two classes of this level, in particular both from High Schools, could participate in person; 24 pupils answered the questionnaire out of 39 pupils involved in the two visits.

EVALUATION QUESTIONNAIRE FOR PUPILS

Dear pupil,

Thank you for participating in SISSA for Schools. We ask you for a few minutes of your time. In fact, we would like to know what you think of the activity. There is also a space for comments and suggestions that you can use to add something more personal if you wish. Thank you for your time.

1. Which programme did you take part in?

- Primary School
- Junior High School
- High School

8. Rate from 1 (very bad) to 4 (very good) the following aspects:

- Classroom activity with the researcher
- Discovering SISSA with the researcher
- Skill and charisma of SISSA students and speakers
- Interest
- Enjoyment
- I learned new things
- It made me want to learn more about science

9. What was the thing you liked the most?

10. What was the thing you liked the least?

11. Would you like to repeat this experience with other researchers?

12. Are you willing to participate in meetings in English?

13. Suggestion and comments.

Thank you!

Results

2. Rate from 1 (very bad) to 4 (very good) the following aspects: (N=24)

	# participants	Average rating
Classroom activity with the researcher	24	3,6/4
Discovering SISSA with the researcher	24	3,6/4
Skill and charisma of SISSA students and speakers	24	3,8/4
Interest	24	3,7/4
Enjoyment	24	3,3/4
I learned new things	24	3,5/4
It made me want to learn more about science	24	3,5/4

3. What was the thing you liked the most?

The answer to this question was a free paragraph. Evaluators summarised the concept in key words, which are presented in a word cloud here below. Bigger word sizes correspond to higher frequency of the key words.

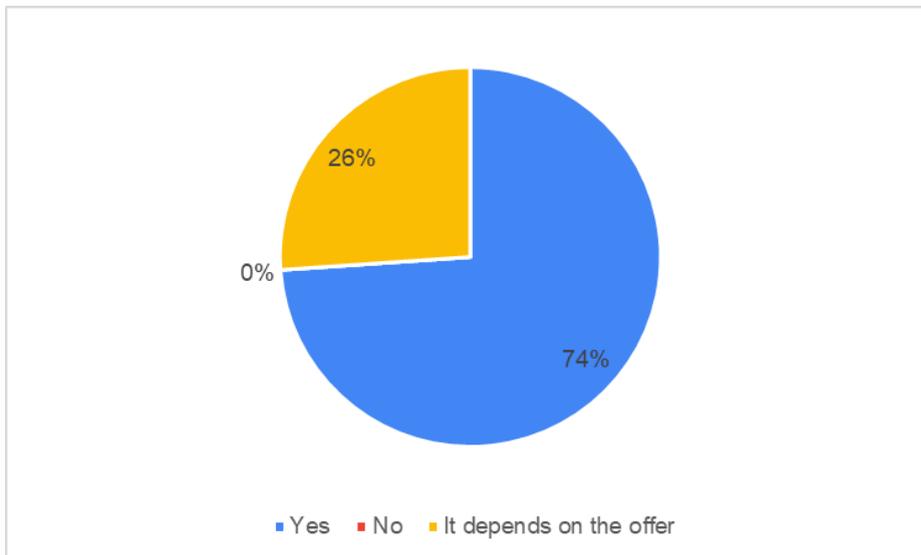


4. What was the thing you liked the least?

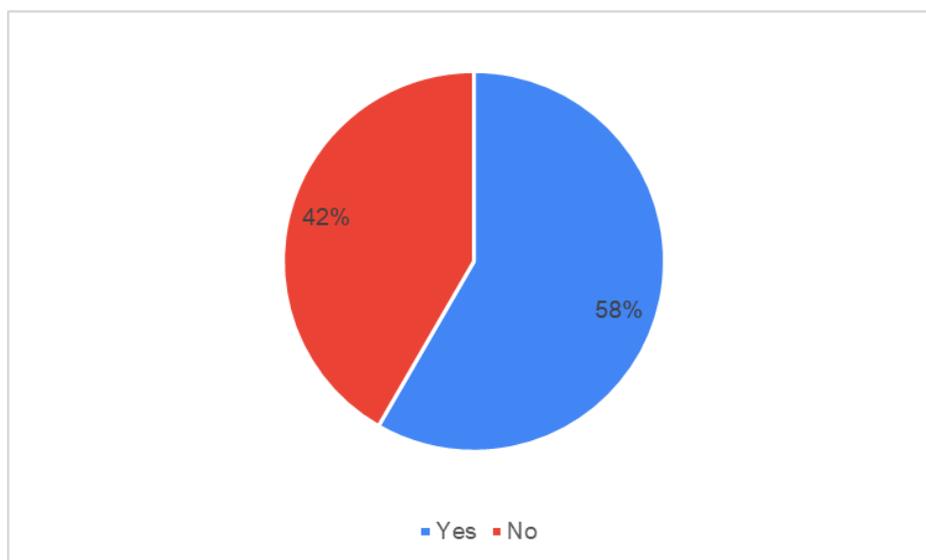
The answer to this question was a free paragraph. Evaluators summarised the concept in key words, which are presented in a word cloud here below. Bigger word sizes correspond to higher frequency of the key words.



5. Would you like to repeat this experience with other researchers? (N=23)



6. Are you willing to participate in meetings in English? (N=24)



7. Suggestions and comments.

- Proporre delle attività interattive.

3.3 S4S – SISSA volunteers' evaluation

The evaluation from the point of view of SISSA volunteers was carried out via a Google Form sent to the 38 volunteers who participated as speakers or game players in the Thursday's activities of S4S in 2021-22. We received answers from 10 of them. The questionnaire for volunteers was structured as in the following BOX.

1. What was/were your role/s in the 2021-22 editions?

- Speaker in a seminar/activity in one or more *digital* Thursday meetings
- Speaker in a seminar/activity in one or more *in-person* Thursday meetings
- Guide (escape game or small group visits) during in-person Thursday meetings
- Participant in the digital game "Guess Who - SISSA Edition"
- Other (specify)

2. What were the best elements of your personal experience?

3. In your opinion, what were the best elements of the S4S programme as a whole?

4. What were the worst elements of your personal experience?

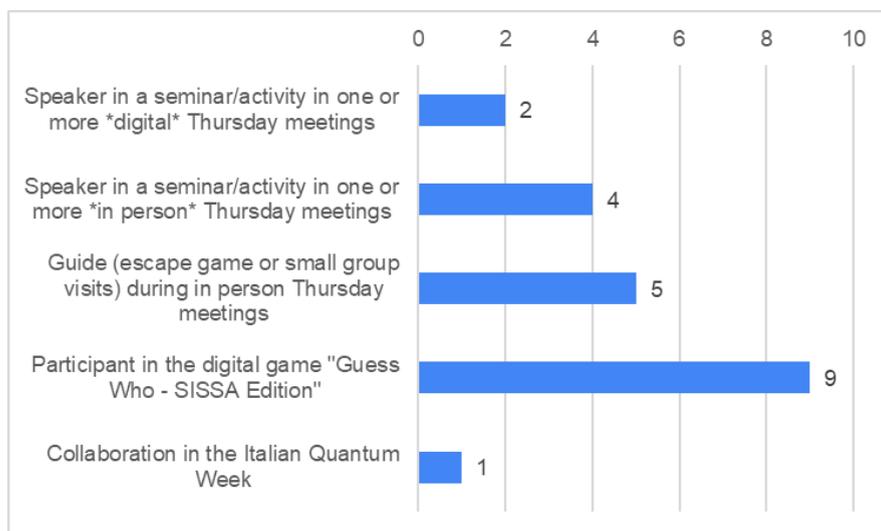
5. In your opinion, what were the worst elements of the S4S programme as a whole?

6. Do you have any suggestions to improve future editions?

7. Free comments

Results

1. What was/were your role/s in the 2021-22 editions? (Possibility of multiple answers; 10 people answered)



2. What were the best elements of your personal experience?

- Interactions with students
- Talking to kids about scientific topics in an informal and fun way, and seeing how smart and informed they are despite their young age.
- Support of SISSA 4 school for preparing a new format of my seminar using games, Super fluid organisation of the event, calendar planning with good time in advance and transparency for all participants, meeting school teacher in person in the school while preparing the online event.
- The interaction with children, answering questions that I would have never imagined, the challenge of explaining my discipline in an accessible way.
- To see how happy the students are to be in Sissa, and to have to prepare the talks which helps a lot in clarity and understanding of the topic.
- The honest and unbounded curiosity of school students during the SISSA in-person tour.
- Il fatto di trovare un modo per spiegare in parole semplici la mia ricerca.
- Getting to know other volunteers.
- Talking directly to kids about astrophysics, in a fun way.

3. In your opinion, what were the best elements of the S4S programme as a whole?

- Putting kids in touch with researchers, which I think can really inspire them to maybe pursue this career. Also the presentation of scientific topics to kids in a fun way, in form of games and activities. In general I think the fun aspect is fundamental in order to spark their interest.
- Offer schools unique opportunities to interact with researchers that impact future choices of students and broaden their horizon!
- Organisation, the young team, the playful approach, flexibility.
- To show the students that science is done in a nice and cool environment, with real people which are passionate about what they do
- Bringing together motivated scientists AND curious students in general, and the guided tour

- in particular.
- La possibilità per gli studenti e studentesse di entrare in contatto con giovani ricercatori in un ambiente informale.
- A constant reminder of how creativity and curiosity are abundant resources in the classroom; they just need to be nurtured.
- Attracting kids to research and to SISSA, trying to let them have fun.

4. What were the worst elements of your personal experience?

- The online format of some activities, which of course was inevitable given the whole covid situation.
- Nothing bad! all great! The only challenging poin so far was to meet in the office of SISSA medina lab to get a t-shirt :) It is simply due to the fact that I forget about reduced office hours and have trouble planning a meeting in advance as it has not that high relevance.
- I got confused with the "indizi" in the escape game at the beginning, I started from the wrong one. When I was the speaker (I did it only once and it was my first time), I did not have the chance to reflect with the medialab team about my presentation, to understand what should be improved for a next presentation.
- I'd like to do more than what I do, but I didn't have time.
- Honestly, there weren't any bad elements.
- Purtroppo ancora il problema del farlo online da casa (almeno nel mio caso).
- That I could not participate as often as I would have liked to due to my work schedule.
- Meeting kids online.

5. In your opinion, what were the worst elements of the S4S programme as a whole?

- Again, just the online format of some activities.
- I noticed during my seminar that was around 12:00 that the kids were tired and hungry. I think this makes it more challenging to follow a scientific seminar.
- The conference room may be too formal for very young children, with whom playing and running may be more effective. More training for volunteers is needed.
- When done in presence (which is the best way in any other regard), it's basically limited to schools from around Trieste. For schools from other parts of Italy it's difficult to participate, and usually they don't even know that the possibility exists.
- Honestly, there weren't any bad elements.
- Meeting kids online.

6. Do you have any suggestions to improve future editions?

- Guess who participants should communicate, to avoid overlap in the hints.
- Hoping that the Covid situation allows all activities to be held in SISSA, the only suggestion I can come up with is maybe to find some new games and/or activities just to change a bit.
- My suggestion would be to start the seminar at 11:00 or after lunch.
- Offering formation targeted to specific age groups. Keeping a database of previous presentations (it could be a starting point for those who have to be speakers for the first time). After the presentation, plan a moment with the speaker to discuss together the presentation and see what worked and what did not work.
- I think the S4S programme is fantastic. If I have to give a suggestion, it could add something if the topic of the seminars were related to what the students are doing at school. Of course this is not always possible, but to have some relation could make even

- more clear that what we do is linked to everyday life.
- Just a random thought: in spring / autumn parts of the School visit session could include a walk in the SISSA park with students, and short talks could be given at different stations. This could for instance replace the 45 min seminar OR the guided tour.
- Hopefully it will be possible to do all activities in person.

7. Free comments

- Thank you very much for your work and for giving us this unique opportunity to spread our passion for science with the younger minds! I enjoyed it a lot. See you next year
- Thank you for your work! I'll miss you next year.
- Very happy to be in SISSA, and S4S is one good reason for it.

4. GENDER BALANCE

A key goal for scientific outreach, and thus for the S4S programme, is to foster gender equality and inclusion in scientific research, where women and minorities are traditionally less represented. Therefore, a specific effort has been carried out since the origin of SISSA for Schools in presenting scientists in the least stereotypical way possible. Facilitators take great care to use gender-neutral and inclusive language to present scientists and scientific careers and to favour a diverse community of volunteers.

Although no formal measures have been applied to force a precise balance, in order not to limit volunteer's freedom to be involved according to their personal desires and constraints, the inclusiveness of the community has so far ensured a very **good level of gender** balance (see paragraph 4.1).

This is very impressive because volunteers mostly belong to SISSA's research community, which is heavily biased: women are only 12% among professors and researchers and 27 among students, according to the 2022 SISSA Gender Equality Plan.

4.1 Gender equality: numbers and time evaluation

We analyse here the gender distribution in the most prominent role of SISSA for schools: speakers, those who give the major contribution to the school visits and accompany classes for a big part of the morning in SISSA.

We are going to analyse two quantities:

- the percentage of female speakers in the speaker pool. Repeated contributions from a single speaker will not affect this variable.
- the percentage of female speakers in the annual school visit calendar. In other words, this represents how often the speaker in front of a random pupil at S4S is a woman. Repeated contributions by a speaker will modify this variable.

The former is a measure of gender equality in the volunteer pool, the latter quantifies how the “image” received by guest pupils is skewed toward one gender or the other. This last quantity is, then, the one which is of primary interest to impact on gender stereotypes on scientific careers.

We have studied the evolution of these quantities between 2014 and 2022: data are reported in Figure 3 and Table 3.

% of female researchers in S4S: time evolution

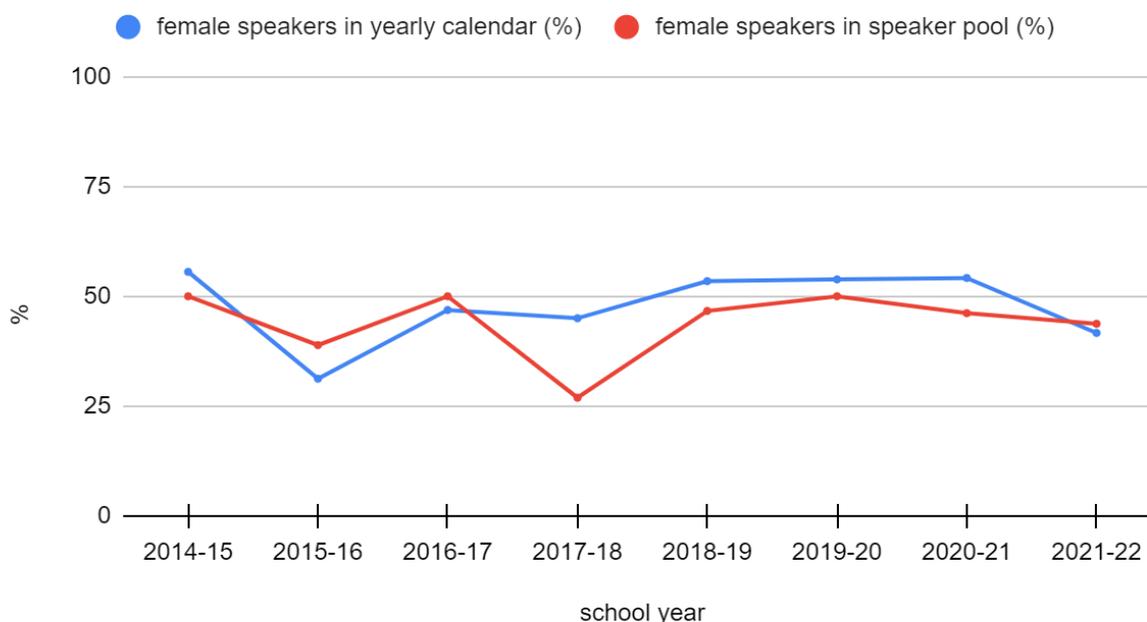


Figure 3: Percentage of female speakers in speaker pool (in red) and percentage of female speakers in the annual school visit calendar (in blue) for the program SISSA for Schools between 2014 and 2021.

School year	Occurrence of female speakers in the annual school visit calendar	Occurrence of male speakers in the annual school visit calendar	Total female speakers	Total male speakers
2014-15	25	20	10	10
2015-16	15	33	7	11
2016-17	15	17	9	9
2017-18	18	22	7	19
2018-19	31	27	14	16
2019-20	14	12	9	9
2020-21	13	11	6	7
2021-22	10	14	7	9

Table 3: Absolute numbers of speakers per gender in the annual school visit calendar and in the pool of speakers.

Figure 3 shows that, since the beginning of the programme and with general stability, participants to the S4S program interact with speakers who are approximately 50% of the time male and 50% of the time female, with a single significant deviation in 2015-16.

Moreover, volunteer speakers are slightly more often male than female, but still significantly more balanced than the average research population in SISSA

APPENDIXES

APPENDIX 1. SISSA FOR SCHOOLS CALENDAR 2021-2022

Date	School	City	Type of school	Class	Pupils	Title of the activity and speaker
OCTOBER 2021						
21	Saba	Trieste	Primary School	5 B	27	Do-Re-Matematica - Maria Strazzullo
28	Liceo Leopardi-Majorana	Pordenone	High School	4 A	25	L'indice Rt, questo sconosciuto - Alessandro Rubin
NOVEMBER 2021						
4	Corsi	Trieste	Junior High School	3 G	21	Una giornata tipo nel mondo della ricerca - Irene Adroher-Benitez e Uriel Luviano
11	ISIS Carducci Dante	Trieste	High School	1	25	Non c'è tempo, sbrigati! - Elena De Paoli
18	IC Roli - Don Milani	Trieste	Primary School	2 A	18	Gatto: solido, liquido o gassoso? - Matteo Becchi
25	Copernico	Udine	High School	2 C	50	Viaggio nell'Universo Oscuro - Giovanni Gandolfi
DECEMBER 2021						
2	Ucellis	Udine	High School	4 A	26	Come to dark side, we have galaxies! - Meriem Behiri
9	Corsi	Trieste	Junior High School	2 B	17	Come funziona una teoria dell'Universo? - Kevin Wolz
JANUARY 2022						
13	Sacro Cuore	Modena	High School	5 A	30	Viaggio nell'Universo Oscuro - Giovanni Gandolfi
20	Saba	Trieste	Primary School	4 C	22	L'affascinante mistero dei buchi neri - Mario Spera
27	Marconi	Udine	Junior High Schools	2 B	21	Non c'è tempo, sbrigati! - Elena De Paoli
FEBRUARY 2022						

10	Liceo Scientifico Einstein	Cervignano	High School	4+5 LSAB	40	Autoscontri tra buchi neri - Mattia Mencagli
17	Addobbati	Trieste	Junior High School	2 C	26	Segnali dallo spazio - Meriem Behiri
25	STUDENT DAY					
MARCH 2022						
10 (in person)	Deledda	Trieste	High School	3 DS	22	Come funziona una teoria dell'Universo? - Kevin Wolz
17	Codermatz	Trieste	Junior High School	3 A	23	Non c'è tempo, sbrigati! - Elena De Paoli
24	Liceo Scientifico Copernico	Udine	High School	2 I	24	Viaggio nell'Universo Oscuro - Giovanni Gandolfi
25	Codermatz	Trieste	Junior High School	3 B	22	Quantum Race - Oxana Mishina
APRIL 2022						
7	Marconi	Udine	Junior High School	1 B	21	Gatto: solido, liquido o gassoso? - Matteo Becchi
21 (in person)	Deledda	Trieste	High School	5 AS	19	Neuroni e chip elettronici: come spiare un circuito neuronale in colture di tessuto nervoso - Michele Giugliano
MAY 2022						
5 (in person)	Duca D'Aosta	Trieste	Primary School	4 C	22	Se lo vedo, (non) ci credo - Maristella Lunardon
12 (in person)	Gianni Rodari	Trieste	Primary School	1 H	20	Gatto: solido, liquido o gassoso? - Matteo Becchi
19 (in person)	Collodi	Sagrado	Primary School	1 A	18	Gatto: solido, liquido o gassoso? - Francesca Rizzato
26 (in person)	Collodi	Sagrado	Primary School	4 A	20	Tassellazioni, la matematica sotto i vostri piedi - Giuseppe Orsatti

APPENDIX 2. ACTIVITIES PROPOSED FROM THE BEGINNING OF THE PROGRAMME

School level	Area	Topic	Speaker
PRIMARY SCHOOLS (listed according to school year)			
I and II school years	Neuroscience	<i>The chemical senses: smell and taste</i>	Simone Pifferi and Gianluca Pietra
I-V school years	Neuroscience	<i>Watch out your nose!</i>	Emilio Agostinelli and Domenico Guarascio
	Physics	<i>Riding the waves</i>	Adriano Amaricci
	Physics	<i>Science jumping</i>	Adriano Amaricci
	Physics	<i>Tasting a star</i>	Claudia Antolini
	Physics	<i>Universe: let's taste, smell, hear, watch and touch it</i>	Claudia Antolini
	Physics	<i>Cats: solid, liquid or gas?</i>	Matteo Becchi and Francesca Rizzato
	Neuroscience	<i>Unity makes...the brain</i>	Alessandra Capuozzo and Sara de Carlo
	Neuroscience	<i>How can the brain tell stories?</i>	Kristina Egumenovska e Davide Spalla
	Neuroscience	<i>A snack with the brain</i>	Micaela Grandolfo
	Neuroscience	<i>Science of colours and colours of science</i>	Sara Laporte
	Physics	<i>A cosmic fruit salad</i>	Claudia Mancuso
	Physics	<i>Being a computer</i>	Simone Notarnicola and Angelo Russomanno
	Neuroscience	<i>And you, do you use your nose?</i>	Valentina Parma
	Neuroscience	<i>What kind of cell I will be when I grow up?</i>	Wendy Tignani and Jessica Zucco
	Neuroscience	<i>Neurons' chats</i>	Wendy Tignani, Manuela Santo and Jessica Zucco
	Physics	<i>It's raining... stars!</i>	Alessandro Trani and Giuseppe Puglisi

	Neuroscience	<i>The brain and the reading of words</i>	Francesca Franzon
	Mathematics	<i>Do-Re-Mathematics: the sound of Geometry</i>	Maria Strazzullo
	Scientific method	<i>What is there inside the box?</i>	Francesca Rizzato
II-III school years	Neuroscience	<i>When ideas fight, the brain acts as referee</i>	Olga Puccioni
III-V school years	Mathematics	<i>Art, numbers and shapes: the golden ratio.</i>	Stefano Amato
	Mathematics	<i>How do mathematicians play?</i>	Stefano Amato e Lucia Tealdi
	Physics	<i>Our ideas of the universe</i>	Carlo Baccigalupi, Rossella Aversa, Eolo Di Casola
	Mathematics	<i>Counting using your finger to understand computers</i>	Barbara Fantechi
	Neuroscience	<i>How to trick the brain</i>	Olga Puccioni
	Neuroscience	<i>Brain? It's us...</i>	Olga Puccioni
	Neuroscience	<i>Which type of cells I'll be when I grow up</i>	Carmen Falcone & Simone Chiola
IV-V school years	Neuroscience	<i>If I see it I (don't) believe it</i>	Maristella Lunardon
	Physics	<i>Matryoshka universe</i>	Claudia Mancuso
	Physics	<i>Let's discover the universe</i>	Claudia Mancuso
	Neuroscience	<i>Let's move!</i>	Dario Olivieri
	Mathematics	<i>Tilings: math under your feet</i>	Giuseppe Orsatti
	Physics	<i>Where does the light fall? The mysterious black holes</i>	Costantino Pacilio
	Neuroscience	<i>Let's pass through the cells membrane</i>	Gianluca Pietra
	Neuroscience	<i>SENSing the world around us</i>	Simone Pifferi and Olga Puccioni

	Neuroscience and physics	<i>Bees, ants and informatics</i>	Sofia Rossi e Cristiano De Nobili
	Physics	<i>The fascinating mystery of black holes</i>	Mario Spera
	Physics	<i>Read and write...DNA</i>	Elena Tea Russo
	Mathematics	<i>Fractal is served!</i>	Lucia Tealdi
	Neuroscience	<i>The language of thought</i>	Mara de Rosa
JUNIOR HIGH SCHOOLS (listed according to first author)			
VI-VIII school years	Physics	<i>More is different!</i>	Adriano Amaricci
	Mathematics	<i>The seven bridges of Königsberg</i>	Francesca Arici
	Mathematics	<i>Teachers prefer Mathematics</i>	Francesca Arici and Lucia Tealdi
	Physics	<i>Signals from outer space</i>	Meriem Behiri
	Physics	<i>Quirks and strangenesses from quarks' world</i>	Alessio Belenchia
	Physics	<i>Space, Time and Light: how Einstein changed the world.</i>	Alessio Belenchia
	Physics	<i>Einstein and his space and time theory.</i>	Alessio Belenchia
	Neuroscience	<i>Myths about brain: true or false?</i>	Maria Bertuzzi
	Neuroscience	<i>Transcranial Magnetic Stimulation Laboratory</i>	Domenica Buetti
	Physics	<i>From where sky ends...</i>	Juan Manuels Carmona Loaiza
	Physics	<i>If you want to keep a secret... tell it to a black hole!</i>	Juan Manuels Carmona Loaiza
	Mathematics	<i>Music and waves</i>	Matteo Casati
	-	<i>Discussion game: The future of science</i>	Simona Cerrato
	-	<i>Discussion game: Do you want to know a secret?</i>	Simona Cerrato

	Neuroscience	<i>Music in the brain</i>	Silvia Corsini and Daniele Maraspin
	Mathematics	<i>Drawing with math</i>	Daniele Dimonte
	Neuroscience	<i>Brain's tricks</i>	Adina Drumea and Shima Talehy Moineddin
	Neuroscience	<i>Scientist for a day</i>	Adina Drumea
	Neuroscience	<i>Brain: still so much to discover</i>	Adina Drumea and Shima Talehy Moineddin
	Mathematics	<i>Quiz: The words of mathematics</i>	Barbara Fantechi
	Mathematics	<i>Quiz: How to build an IKEA wardrobe</i>	Barbara Fantechi
	Mathematics	<i>What modern mathematicians do</i>	Barbara Fantechi
	Neuroscience	<i>Cut and sew course with DNA.</i>	Jessica Franzot
	Neuroscience	<i>Neuroscience laboratories visit</i>	Micaela Grandolfo and Jessica Franzot
	Neuroscience	<i>Let's play with the light lightening up and down cells.</i>	Micaela Grandolfo
	Mathematics	<i>Profession: coach of micro swimmers</i>	Luca Heltai
	Mathematics	<i>Drawing numbers</i>	Ilaria Lucardesi
	Mathematics	<i>Nature save...</i>	Ilaria Lucardesi
	Scientific method	<i>A typical day in the world of research</i>	Uriel Luviano and Irene Adroher-Benítez
	Physics	<i>Science in your home</i>	Uriel Luviano and Irene Adroher-Benítez
	Physics	<i>Matryoshka Universe</i>	Claudia Mancuso
	Physics	<i>Spatial waves hunters</i>	Claudia Mancuso
	Biophysics	<i>Nuclear: a forbidden fruit</i>	Mattia Marenda
	Physics	<i>Quantum race</i>	Oxana Mishina
	Mathematics	<i>The mathematic of Sphynx</i>	Lorenzo Nardini
	Physics	<i>The misunderstood universe</i>	Andrea Oddo

	Physics	<i>Space's Curiosities</i>	Andrea Oddo
	Neuroscience	<i>Let's move!</i>	Dario Olivieri
	Physics	<i>Einstein gravitational elevator</i>	Costantino Pacilio
	Neuroscience	<i>Smelling the danger</i>	Valentina Parma
	Neuroscience	<i>Virtual laboratory of cell cultures</i>	Beatrice Pastore
	Biophysics	<i>How to unroll the RNA and win tuberculosis C</i>	Andrea Perez
	Neuroscience	<i>Sensory extravagances. How the brain knows the external world</i>	Simone Pifferi
	Neuroscience	<i>Taste is not enough</i>	Simone Pifferi
	Neuroscience	<i>Optical illusions</i>	Olga Puccioni
	Physics	<i>Does the Universe trick us?</i>	Giuseppe Puglisi and Alessandro Trani
	Biophysics	<i>Magical chemistry</i>	Francesca Rizzato
	Scientific method	<i>What is there inside the box?</i>	Francesca Rizzato
	Computer science	<i>Let's take the computer apart!</i>	Francesca Rizzato, Andrea Papale and Elena Tea Russo
	Scientific method / physics	<i>Tinkering with catapults</i>	Francesca Rizzato
	Scientific method / physics	<i>Tinkering with cardboard automata</i>	Francesca Rizzato
	Neuroscience	<i>Dancing with bees</i>	Sofia Rossi e Cristiano De Nobili
	Neuroscience	<i>Let's make a neuron!</i>	Manuela Santo and Osvaldo Artimagella
	Physics	<i>Like raisins in panettone, or: how does a theory of the Universe work?</i>	Kevin Wolz
	Neuroscience	<i>Stem cells</i>	Manuela Santo, Wendy Tignani and Jessica Zucco

	Neuroscience	<i>EEG laboratory</i>	Tiziano Suran
	Mathematics	<i>Water, soap and minimal surfaces</i>	Lucia Tealdi
	Mathematics	<i>Fractal is served!</i>	Lucia Tealdi
	Neuroscience	<i>DNA laboratory</i>	Christina Vlachouli and Helena Krmac
HIGH SCHOOLS (listed according to area and surname of first author)			
PHYSICS		<i>Quantum physics with the naked eye: from electrons to superconductivity</i>	Adriano Amaricci
		<i>More is different: short stories of collective phenomena</i>	Adriano Amaricci
		<i>Order from disorder</i>	Adriano Amaricci
		<i>Interdisciplinarity</i>	Daniele Amati
		<i>Are galaxies socially distant?</i>	Darko Donevski
		<i>The blurred boundaries between scientific disciplines</i>	Daniele Amati
		<i>The dark engine of the universe</i>	Claudia Antolini
		<i>Gravitational waves from the Big Bang</i>	Carlo Baccigalupi
		<i>A selfie from the universe</i>	Carlo Baccigalupi
		<i>In search of ET: the exoplanets</i>	Carlo Baccigalupi
		<i>Deep Universe: from the first objects to the gateway to the Big Bang</i>	Carlo Baccigalupi
		<i>What is left from the Big Bang: the life of a cosmologist in the past, present and future</i>	Carlo Baccigalupi and Giuseppe Puglisi with Marzia Umani
		<i>What is the color of flowers through a silicon lens?</i>	Stefano Baroni
		<i>The paradox of medical tests: when statistics and intuition collide</i>	Matteo Becchi
		<i>Come to the dark side, we have galaxies</i>	Meriem Behiri
	<i>Space, Time and Light: how Einstein changed the world.</i>	Alessio Belenchia	
	<i>The (poor) Schrödinger's cat: oddities and curiosities from the quantum world</i>	Alessio Belenchia	

<i>Space, time e Albert: 100 revolutionary years.</i>	Alessio Belenchia
<i>The history of the universe at a glance</i>	PhD students from the Astrophysics and cosmology and Astroparticle groups based on the exhibit at 6 th floor
<i>From Newton to strings in 30 minutes</i>	Matteo Bertolini
<i>Listening to the Universe with gravitational waves</i>	Lumen Boco and Beatrice Allegri
<i>The Saga of symmetries in physics</i>	Loriano Bonora
<i>The Universe and its symmetries</i>	Loriano Bonora
<i>Mistreating matter</i>	Massimo Capone
<i>Physics Superconductivity: will the super evil save the world?</i>	Massimo Capone
<i>Abused super-active: the surprising new superconductors and our future</i>	Massimo Capone
<i>Black holes and revelation</i>	Manuel Juan Carmona
<i>Who has ever seen a black hole? Who has fallen in it?</i>	Manuel Juan Carmona
<i>It is a complex world!</i>	Erika Coppola, Stefano Ruffo, Guido Sanguinetti, Donato Ramani
<i>There is no time, hurry up!</i>	Elena De Paoli
<i>Geometry is boring...for that it works!</i>	Eolo Di Casola
<i>Time machine: science or science fiction?</i>	Eolo Di Casola
<i>The Anthropic Principle</i>	Eolo Di Casola
<i>Ideas of space and time</i>	Eolo Di Casola
<i>Theory (and theories) of gravity, that is: story of a free falling</i>	Eolo Di Casola
<i>Detection of gravitational waves</i>	Eolo Di Casola
<i>There is a physicist, a mathematician and a gardener ... namely: tools to choose a good theory of gravitation</i>	Eolo Di Casola
<i>What are we looking for out there?</i>	Eolo Di Casola and Claudia Mancuso

<i>A space journey</i>	Chiara Di Paolo
<i>Buried in dust: encounters with distant worlds</i>	Darko Donevski
<i>Superconductors: will supervillains save the world?</i>	Laura Fanfarillo and Massimo Capone
<i>Discovering the quantum world: the tunnel effect</i>	Matteo Ferraretto
<i>Drunks and snakes: the strange world of simulations</i>	Thorben Fröhling, Matteo Becchi and Diego Doimo,
<i>The force of fluctuations</i>	Andrea Gambassi
<i>A journey into the dark universe</i>	Giovanni Gandolfi
<i>Quantum ne sai</i>	Giovanni Gandolfi, Mattia Mencagli and Kevin Wolz
<i>The Invisible Universe: from neutrinos to dark matter</i>	Josu Hernández García and Juan Herrero Garcia
<i>How can we see black holes</i>	Elias Kammoun
<i>Dialogue between the universe and the data</i>	Nicoletta Krachmalnicoff and Roberto Trotta, with Simona Cerrato, Luca Papapietro, Claudia Sciarra.
<i>Cristals: when the order is created by itself</i>	Sara Laporte
<i>Emmy Noether and her theorem: symmetries in physics</i>	Rodrigo de León Ardón
<i>Quantum entanglement for dummies</i>	Alessio Lerosé and Paola Ruggiero
<i>When spacetime is dynamic: neutron stars, black holes and gravitational waves</i>	Stefano Liberati
<i>Black holes and other more extreme spaces explorations at the borders of Relativity</i>	Stefano Liberati
<i>Black holes, wormholes and time machines</i>	Stefano Liberati
<i>From the photon to the chemical bond: a path towards a sustainable future with the energy of the sun</i>	Stefano Fabris
<i>Between science and science fiction: wormholes, black holes and time travel</i>	Stefano Liberati with Elena Tomat and Irene Modolo
<i>What is the time?</i>	Stefano Liberati

<i>Looking for Schrödinger's cat</i>	Uriel Luviano
<i>Dust of galaxies</i>	Claudia Mancuso
<i>But... where do galaxies come from?</i>	Claudia Mancuso
<i>Small, skinny, and hyperactive: the galaxies of the main sequence</i>	Claudia Mancuso
<i>Galaxies: the islands of light in the universe</i>	Claudia Mancuso with Alberto Laratro and Giancarlo Cinini
<i>From laboratory experiments to virtual stimulation: physics meets biology to explain the world</i>	Mattia Marena with Monia Torre
<i>Matter, antimatter, dark matter: what is the Universe made of?</i>	Guido Martinelli
<i>Suspicious behavior in the elementary particle zoo</i>	David Marzocca
<i>The music of physics</i>	Uriel Luviano and the SISSA Choir
<i>LHC and Higgs Boson</i>	David Marzocca
<i>LHC: promises and discoveries</i>	David Marzocca
<i>Superconductivity and superfluidity: quantum effects to the naked eye</i>	Giacomo Mazza
<i>Towards a superintelligence: the possibilities and risks of developing AI</i>	Paolo Pietro Mazza
<i>Exploring a microscopic world: from polymers to quantum physics</i>	Paolo Pietro Mazza and Elena Tartaglia
<i>Fantastic black holes and how to find them</i>	Jacopo Mazza
<i>Bumper cars and black holes</i>	Mattia Mencagli
<i>Absolute zero</i>	Giuseppe Mussardo
<i>Simply chaos: can the unpredictable be measured?</i>	Simone Nortanicola and Angelo Russomanno
<i>Like black holes in the sky</i>	Andrea Oddo
<i>Science on the sofa: Was Einstein right? Relatively</i>	Andrea Oddo and Ruggero Rollini
<i>The black hole in the garden</i>	Costantino Pacilio

<i>A camera on the world's smallest slide</i>	Emanuele Panizon
<i>Ig-Nobel</i>	Emanuele Panizon and Laura Fanfarillo
<i>Microspheres learning</i>	Emanuele Panizon
<i>In the world of symmetries of Emmy Noether</i>	Roberto Percacci
<i>Quantum gravity: at the edge of space-time</i>	Roberto Percacci
<i>Artificial intelligence and animal behavior</i>	Alberto Pezzotta and Matteo Adorisio
<i>Self driven vehicle: science and ethics</i>	Federico Pigozzi
<i>With the right eyes</i>	Giuseppe Puglisi
<i>The greatest spectacle after the big bang</i>	Giuseppe Puglisi
<i>The search of extraterrestrials: evidence for and against the existence of aliens</i>	Giuseppe Puglisi and Alessandro Trani
<i>Mathematical models and fluid simulations: application to medicine, sport, environment and industry</i>	Giaanluigi Rozza
<i>Synchronization: why the heart cells beat in unison</i>	Stefano Ruffo
<i>Chaos and randomness</i>	Stefano Ruffo
<i>Synchronization: from the flashing of fireflies to parallel computing</i>	Stefano Ruffo
<i>The butterfly effect: sensitive dependence of the initial conditions</i>	Stefano Ruffo
<i>Geometric shapes' hunt</i>	Nicholas Rungi
<i>Colors in science</i>	Mariami Rusishvili and Sara Laporte
<i>Many balls in a quantum pinball machine: how to prevent it from crashing</i>	Angelo Russomanno
<i>Chaos</i>	Angelo Russomanno
<i>The dark matter awakens</i>	Paolo Salucci
<i>The dark side of the Universe</i>	Paolo Salucci
<i>From the reading of thought to the quantum mechanics</i>	Giuseppe Santoro

	<i>The unification of forces</i>	Marco Serone
	<i>Black holes and gravitational waves: what are they and why should we care?</i>	Mario Spera
	<i>Neutrino: elusive, evasive, and so fascinating</i>	Arsenii Titov with Sofia Rossi and Ilaria Gabbarrini
	<i>How many elementary particles are there? Ask Susy</i>	Lorenzo Ubaldi, Anna Greco and Laura Busato
	<i>Why 2 + 2 is not always 4: that is, interference phenomena between the classical and the quantum world</i>	Angelo Valli
	<i>Dark Energy and the accelerated expansion of the universe</i>	Kevin Wolz
PHYSICS AND NEUROSCIENCE	<i>The mysterious compass</i>	Beatrice Pastore, Alessandro Trani and Giuseppe Puglisi
		Beatrice Pastore, Costantino Pacilio and Riccardo Murgia
	<i>Time from the cosmos to the mind</i>	Domenica Bueti and Stefano Liberati
BIOPHYSICS AND DATA SCIENCE	<i>What does my DNA have to do with a jar of yogurt?</i>	Irene Adroher - Benítez
	<i>Science on the sofa: how drugs are created</i>	Mattia Bernetti and Ruggero Rollini
	<i>Understand biology with molecular dynamics</i>	Giovanni Bussi
	<i>What do physics look for in biology? Wandering through cells and chromosome</i>	Ana Maria Florescu
	<i>Among the gears of Artificial Intelligence</i>	Alessandro Laio, Elena Tea Russo e Francesca Rizzato
	<i>Laplace's Demon and atomistic simulations</i>	Alessandro Laio and Elena Tea Russo
	<i>How can a physicist explain biologic systems? Examples of ordinary crazyness.</i>	Mattia Marena
	<i>Physics and biology: not so far away</i>	Mattia Marena, Matteo Adorisio e Nina Ilieva
	<i>The physics of viruses and molecules</i>	Giovanni Pinamonti
	<i>When the going gets tough, the toughs get... simulate!</i>	Francesca Rizzato

	<i>Complex is not complicated: similarities between a copying class, a flock and magnets</i>	Francesca Rizzato
	<i>Google ecology: the algorithm that changed our lives can save us from extinction?</i>	Francesca Rizzato
	<i>What language do proteins speak?</i>	Elena Tea Russo
	<i>Life the easiest game: from simple rules to biological complexity.</i>	Edoardo Sarti and Giovanni Pinamonti
	<i>Hey Siri, what is computational linguistics?</i>	Gabriele Sarti
	<i>Dear smart oven, but do you understand Italian?</i>	Giovanni Alzetta
MATHEMATICS	<i>Lab: Mathematics of shapes. Experiments and ideas from biology</i>	Daniele Agostinelli, Valentina Damioli, Alessandro Lucantonio and Giovanni Noselli
	<i>Computers and their solutions, wrong but useful</i>	Giovanni Alzetta
	<i>The Devil's interval and other mathematical monsters</i>	Stefano Amato
	<i>Matrix is everywhere: graphs and matrices in everyday life</i>	Francesca Arici
	<i>Mathematics of love</i>	Ivan Beschastnyi
	<i>Puzzles and invariants</i>	Ivan Beschastnyi
	<i>The mathematics of the visual system</i>	Ivan Beschastnyi
	<i>What is a flexagon and how to build one</i>	Ivan Beschastnyi
	<i>The proof: what you see depends on how you look</i>	Carolina Biolo
	<i>Mathematic of space: from football to geographical maps</i>	Gabriele Bogo
	<i>That's chaos, not chance</i>	Matteo Casati
	<i>Count by ear. From Pythagoras to vocoder</i>	Matteo Casati
	<i>Figurae egressentium angulorum</i>	Matteo Casati

<i>A sphere against Euclid</i>	Cecilia Collà and Anna Vallortigara
<i>What are supercomputers used for science? And what challenges can they face?</i>	Stefano Cozzini
<i>Chewing numbers in the clouds: how do scientists do arithmetic</i>	Stefano Cozzini
<i>Who cares about mathematics</i>	Riccardo Cristoferi
<i>Tactile mathematics</i>	Giorgia del Bianco and Stefano Piani
<i>Mathematical tricks</i>	Daniele Dimonte
<i>Dobble, how mathematicians play</i>	Daniele Dimonte and Andrea Papale
<i>Beyond Euclid and Descartes: the invisible geometry</i>	Barbara Fantechi
<i>Mathematics. From theory to applications. And back.</i>	Nicola Gigli, Gianluigi Rozza, Maria Strazzullo, Martina Teruzzi, Daniele Gouthier
<i>A non-adjustable world</i>	Michele Graffeo
<i>Behind the scenes of machine learning</i>	Luca Heltai
<i>Profession: coach of micro swimmers</i>	Luca Heltai
<i>Show with the calculator that Zeno was wrong</i>	Roberto Innocente
<i>The lightboard and its physics</i>	Roberto Innocente
<i>... what if Earth would be a donut?</i>	Antonio Lerario
<i>The one who searches, finds ... and the one who REsearches?</i>	Ilaria Lucardesi
<i>Fantastic rabbits and how to count them</i>	Guido Mazzucca
<i>Mathematics among magic end riddles</i>	Guido Mazzucca
<i>From albatross' flight to the hull of a ship</i>	Andre Mola
<i>Waves, hulls e simulations</i>	Andrea Mola
<i>Not all donuts come out with a single hole</i>	Annamaria Ortu
<i>Playing with probability theory. How far do we go with common sense?</i>	Gabriele Perfetto

	<i>Navigating towards the future: from supercomputers to tablets with mathematical models and scientific computing</i>	Gianluigi Rozza
	<i>Mathematics for society</i>	Gianluigi Rozza
	<i>Count the uncountable: how big is infinite?</i>	Alessandro Rubin
	<i>Universe counting</i>	Alessandro Rubin
	<i>Epidemics, vaccinations and mathematical models</i>	Alessandro Rubin
	<i>The unknown Rt index</i>	Alessandro Rubin
	<i>A matter of perspective</i>	Carlo Scarpa
	<i>Simply complex</i>	Carlo Scarpa
	<i>Everything under control: equations for the environment</i>	Maria Strazzullo
	<i>If “clouds are not spheres and mountains are not cones”...</i>	Lucia Tealdi
	<i>Give me a pencil and I will measure the world</i>	Lucia Tealdi
NEUROSCIENCE	<i>Neurosciences come for lunch</i>	Marilena Aiello
	<i>Measurements and personal stories: the two neuroscience instruments of studying the brain</i>	Marilena Aiello
	<i>The ways of memory: how we remember poems</i>	Sara Andretta
	<i>Lab: Look into the brain without opening the head</i>	Georgette Argiris and Sebastian Korb
	<i>Lab: How does your brain develop?</i>	Osvaldo Artimagnella, Vittorai Avaro, Simone Chiola, Michele Frisari, Cristina Fimiani, Gabriele Luzzi, Antonello Mallamaci, Viviana Opinato, Larura Rigoldi, Manuela Santo, Wendalina Tigani and Jessica Zucco
	<i>Nanomaterials and neurons: from brain machine interfaces to cyborg tissues</i>	Laura Ballerini
	<i>The curious brain</i>	Maria Bertuzzi

<i>Lab: The cutting and sewing together of DNA</i>	Carlotta Bon, Jessica Franzot, Christina Vlachouli, Federica Ferrero and Chiara Santulli
<i>The brain and the perception of time</i>	Domenica Bueti with Anna Lombardi
<i>Science on the sofa: What the time is for a neuroscientist?</i>	Domenica Bueti with Ruggero Rollini
<i>Lab: In search of the meaning of language</i>	John Carr, Mara de Rosa, Jana Hasenäcker and Mari Ktori
<i>The DNA is mine and I manage it myself. Crack fate</i>	Simone Chiola, isabella Apruzzese and Jessica Racca
<i>The indecisive stem cells</i>	Simone Chiola and Wendy Tigani
<i>Humans against monkeys: the language round</i>	Davide Crepaldi
<i>Nature and culture: why reading is easy and impossible at the same time</i>	Davide Crepaldi
<i>Mind maps and brain traps</i>	Davide Crepaldi, Gianmarco Ghetti and Giulia Tonel
<i>Cognitive facts and misdeeds behind our reading skills</i>	Davide Crepaldi, Simone Perfetti and Simone Chiusoli
<i>Do you really know your brain? From superpowers to super deceptions</i>	Viola Del Pinto
<i>Behind the doors of the laboratory: The story of an experiment</i>	Adina Drumea
<i>The reality behind the science manual. What scientists are doing as you prepare for your school test</i>	Adina Drumea
<i>Lab: Exploring language with EEG recordings</i>	Kristina Egumenovska, Zeynep Kaya Gökçen and Katarina Marjanović
<i>Meta-cognition: How the brain tells you when you're wrong.</i>	Tore Erdmann
<i>The time machine in the brain: how do we perceive time</i>	Anna Fehrenbach and Catia Baldassarri
<i>The mysteries of vision: how do optical illusions work?</i>	Michele Fornaciai

<i>How do we study the human brain?</i>	Michele Fornaciai
<i>Why does our brain fascinate us? More questions than answers</i>	Ana Fiò
<i>The language of the brain</i>	Francesca Franzon and Valentina Pescuma
<i>Cut and sew course with DNA.</i>	Jessica Franzot
<i>Stuck in autopilot: movement, neurons, and neurodegenerative</i>	Vincenzo Giacco with Emma D'Orto and Emanuele Bozzoni
<i>Neuroscience in silico: Mathematics and computers to study the brain</i>	Michele Giugliano and Lorenzo Colombo
<i>"Broadhand" brains</i>	Michele Giugliano
<i>Neurons and electronic chips: how to spy on a neuronal circuit in tissue cultures</i>	Michele Giuliano
<i>Dialogue between silicon neurons and biological neurons</i>	Michele Giugliano, Luca Heltai, Guido Sanguinetti e Davide Zoccolan, with Simona Cerrato, Luca Papapietro e Claudia Sciarma
<i>Neurons and electronic chips: how to spy a neuronal circuit in nerve tissue cultures</i>	Michele Giugliano and Beatrice Pastore
<i>Let's play with the light lightening up and down cells.</i>	Micaela Grandolfo
<i>Brain and sugars: dangerous relationships</i>	Micaela Grandolfo
<i>Lab: Turning on the cells</i>	Micaela Grandolfo and Kevin Yarib Gonzalez Velandia
<i>The hippocampus: A window to brain research</i>	Natalia Grion
<i>Recording the taste</i>	<i>Domenico Guarascio and Nicole Sarno</i>
<i>Lab: The reading brain is a hard – working brain</i>	<i>Jana Hasenäcker, Yamil Vidal dos Santos, Viola del Pinto, Olga Solaja</i>
<i>Lab: Looking into the brain from the outside</i>	Maria Ktori and Yamil dos Santos
<i>Cognitive mechanism promoting social coordination</i>	Jaroslav Lelonkiewicz
<i>Alien sequence experiment</i>	Jaroslav Lelonkiewicz

<i>A brain, many genomes</i>	Gabriele Leoni, Federico Ansaloni, Giovanni Spirito, Nicolò Gualandi, Mauro Esposito and Sara Finaurini
<i>Embryonic development of the central nervous system</i>	Antonello Mallamaci
<i>Development of the cerebral cortex</i>	Antonello Mallamaci and his lab group
<i>From nose to brain: olfaction, between science and literature</i>	Anna Menini and Donato Ramani
<i>Introduction to neuroscience</i>	Majid Moshtagh
<i>Lab: Between the forms, sounds, and colors. Towards the discovery of the meaning of words</i>	Andrea Nadalini and Eva Viviani
<i>Smelling the danger</i>	Valentina Parma
<i>Lab: Growing... neurons!</i>	Beatrice Pastore and Massimo Righi
<i>Lab: Cultivating... neurons!</i>	Beatrice Pastore, Francesca Zummo and Federica Ferrero
<i>Nanomaterials as a basis for growing neurons</i>	Simone Perfetti and Laura Ballarini
<i>For a handful of neurons. Team quiz on the brain</i>	Gianluca Pietra and Dario Olivieri
<i>The alphabet of smells</i>	Simone Pifferi
<i>Sensory extravagances</i>	Simone Pifferi
<i>Open and close proteins: senses and ion channels</i>	Simone Pifferi
<i>Pheromones: myth or reality?</i>	Simone Pifferi
<i>The chemical senses: smell and taste</i>	Simone Pifferi and Gianluca Pietra
<i>Physiology of olfaction</i>	Simone Pifferi and Gianluca Pietra
<i>Neuronal circuits and biomaterials</i>	Diletta Pozzi
<i>Plastic and carbon for growing neurons</i>	Diletta Pozzi, Flavia Fortin and Mariateresa Bradascio
<i>If seeing is so simple...try to do it!</i>	Olga Puccioni

	<i>Someone reads... and someone understands numbers</i>	Olga Puccioni e Riccardo Cristoferi
	<i>The virus quiz</i>	Massimo Righi
	<i>The first steps on the brain</i>	Manuela Santo
	<i>Science on the sofa: Animal testing. What is really about?</i>	Manuela Santo and Ruggero Rollini
	<i>The strange words experiment</i>	Olga Solaja
	<i>Lab: Non-invasive brain stimulation</i>	Andrea Solmi
	<i>The neural basis of memory how to use it to remember everything</i>	Tiziano Suran and Nicole Beneventi
	<i>The world inside the eyes</i>	Shima Talehy Moineddin
	<i>My brain makes colour</i>	Shima Talehy Moineddin
	<i>Stem cells</i>	Wendy Tignani and Jessica Zucco
	<i>Animal experimentation with science and consciousness</i>	Wendy Tigani, Manuela Santo, Federica Baldassari andh Alessandro Tavecchio
	<i>Electronics and informatics for neurobiology</i>	Andrea Tomicich
	<i>Eugenio: do you remember the face?</i>	Alessandro Treves
	<i>But really it all comes down to who has it bigger?</i>	Alessandro Treves
	<i>The 2014 Nobel Prize for neuroscience: a path from space to memory</i>	Alessandro Treves
	<i>Know and forget: semantic memory and semantic dementia</i>	Miriam Vignando
	<i>The wisdom of the group: live neuroscience experiment</i>	Rosilari Bellacosa and Natalia Grion
SCIENCE AND SOCIETY	<i>The social side of science / Science on social media</i>	Matteo Becchi, Irene Rita Pia Schillaci and Alessandro Tavecchio
	<i>Discussion game: take care of me</i>	Monica Belfiore, Theodora Bogdan, Silvia Girardi, Roman Vuerich e Serena Zacchigna inside the project CURIoSA

	<i>Science: a story full of failures</i>	Andrea Belli
	<i>Beautiful and professional documents with LaTeX</i>	Giorgia del Bianco and Matteo Gamboz
	<i>Send me a selfie</i>	Andrea Delise e Piero Calucci
	<i>Science and stupidity</i>	Tullio Bigiarini and Giorgia del Bianco
	<i>SciENZA Donne: quiz and chat</i>	Elena De Paoli, Camilla Fiz and Domenica Bueti.
	<i>Discussion game: I, Robot. Our life with Artificial Intelligence</i>	Simona Cerrato
	<i>Online security, between clouds and underpants</i>	Andrea Delise
	<i>SISSA Virtual Tour</i>	Agnese Glauda, Sophia Grew, Alessandra Ria e Maria Luna Tescari
	<i>The dream team of the Italian physics</i>	Davide Montesarchio
	<i>Is science democratic?</i>	Riccardo Murgia, Costantino Pacilio, Nicola Barsagli e Serena Fabrini
	<i>Maksimović: a half life</i>	Giuseppe Mussardo and oscar Pizzulli
	<i>SISSA Student Day Quiz</i>	Andrea Oddo
	<i>Why does journalism struggle to report science?</i>	Daniela Ovadia and Federica Sgorbissa
	<i>Science at any cost and... revenue. Who finances the research and how it manages it</i>	Gabriele Rizzetto
	<i>Discussion game: Superwomen and supermen? Is it right to use drugs and technology to improve the body and mind?</i>	Paola Rodari
	<i>Tinkering with light and shadows</i>	Elena Tea Russo, Matteo Becchi and Francesca Rizzato

	<i>Ask Me Anything</i>	Maria Strazzullo, Uriel Luviano e Diletta Pozzi
		Alice Ballabio, Alessio Belenchia, Gaia Contu, Maristella Lunardon e Andrea Mola.
	<i>Whose is the sky?</i>	Roberto Trotta, Marina D'Alessandro
	<i>The archipelago of wonders: Paolo Budinich and the birth of the city of science</i>	Erio Tosatti
	<i>We all are Dr. Jekyll and Mr. Hyde: a short journey into behavioral neuroscience</i>	Marcello Turconi
	<i>Between academy and business: research and job opportunities</i>	Simonetta Vetter and Renè Buttò
	<i>Beyond research: effects and benefits for the community</i>	Simonetta Vetter and Renè Buttò