

SPARKLING SCIENCE 2.0

Funding programme to strengthen cooperation
between researchers, schools and society

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and Research

Sparkling Science 2.0 is a funding programme run by the OeAD, Austria's Agency for Education and Internationalisation, on behalf of the Austrian Federal Ministry of Education, Science and Research (BMBWF). It supports citizen science projects in which school-children involved, of all ages, and members of civil society too, become actively involved in the research process.

Through their engagement, knowledge and skills, they make important contributions to the work on current research questions which would not be possible without their cooperation.



Title page:
André-Marie Ampère

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Preface

HOW SCIENCE WORKS

“Sparkling Science” aims to strengthen public trust in science: The projects address research questions of relevance to our society, establish new methods and inspire enthusiasm for science.

Science and research are of central importance in the world we live in and help us in our everyday activities. Science is all around us when we use our smartphones and take medications that improve our health. So science is central to our lives and to modern society, and trust in science is analogous to trust in our society and democracy. And we need to fight for this trust on a daily basis. It is clear that there is still widespread scepticism towards science and hostility towards democracy.

To counter this proactively and to rebuild trust, the Federal Ministry of Education, Science and Research (BMBWF) has devised a ministerial strategy, entitled “Trust in Science and Democracy (TruSD)”, which includes a 10-point programme. This ranges from an investigation into the causes of that scepticism to the creation of science ambassadors. The aim of the programme is to make science tangible, accessible and, most importantly, understandable to all. One concept that is already established in this area is “citizen science”, which enables members of the public to become directly involved in research projects. Universities and various other educational institutions, as well as a range of societies and private individuals, work together on a project. The knowledge transfer that this facilitates is not meant to be a one-way process. Instead the knowledge gain is based on participation, because without the active involvement of private individuals this form of research would not be possible at all. It can offer new perspectives, direct contact with specific target groups, or enable working together to gather and evaluate large volumes of data.

The Austrian research funding programme “Sparkling Science” was launched in 2007, linking the scientific community with schools to address issues in research and new areas of knowledge. The “Sparkling Science” programme is the only one of its kind in Europe. In this way Austria as a research location is playing a leading role not only in nurturing early-career scientists and researchers, but also in citizen science – that particular form of knowledge acquisition that is built on participation and integration.



Marie Curie

From 2007 to 2019, more than 107,000 people from 200 research institutions, 535 schools and 185 partners from business and society participated in a total of 299 projects funded by “Sparkling Science”. Numerous evaluations confirm that the “citizen science” approach has a positive impact on our research and education systems, which in turn has enabled this research funding programme to be continued. “Sparkling Science 2.0” was launched in 2021.

This brochure, published by the OeAD, Austria’s Agency for Education and Internationalisation, presents some current projects from the first call for proposals under “Sparkling Science 2.0”. They link a wide range of research disciplines and types of school from all over Austria, covering topics from migration research to microbiology. Some of these projects focus on issues in ecology and sustainability – further proof that “Sparkling Science 2.0” projects are addressing issues of relevance to society and inspiring people to take an interest in research questions who perhaps did not previously realise how fascinating and exciting science can be.

We are grateful to all the schoolchildren, researchers and teachers who have taken part, as well as our partners in the business community and society for their outstanding contributions.

We hope you enjoy reading it and will be inspired to get involved in new projects.

Ao. Univ.-Prof. Dr. Martin Polaschek
Federal Minister of Education,
Science and Research

Jakob Calice, PhD
Managing Director, OeAD,
Austria’s Agency for Education
and Internationalisation

2007 ...

... the Ministry of Science and Research launched the “Sparkling Science” programme to promote young scientists. Until 2019, a total of 299 citizen science projects were funded with almost 35 million euros. In total, more than 107,000 researchers, teachers and schoolchildren were involved in these innovative projects.

ELIGIBLE INSTITUTIONS AND ORGANISATIONS

- **Universities, private universities, non-university research institutions**
- **Universities of applied sciences and other equivalent course providers**
- **Universities for teacher education**
- **charitable organisations, companies or NGOs that have a scientific or academic research purpose and collaborate with universities or non-university research institutions on the funded projects.**

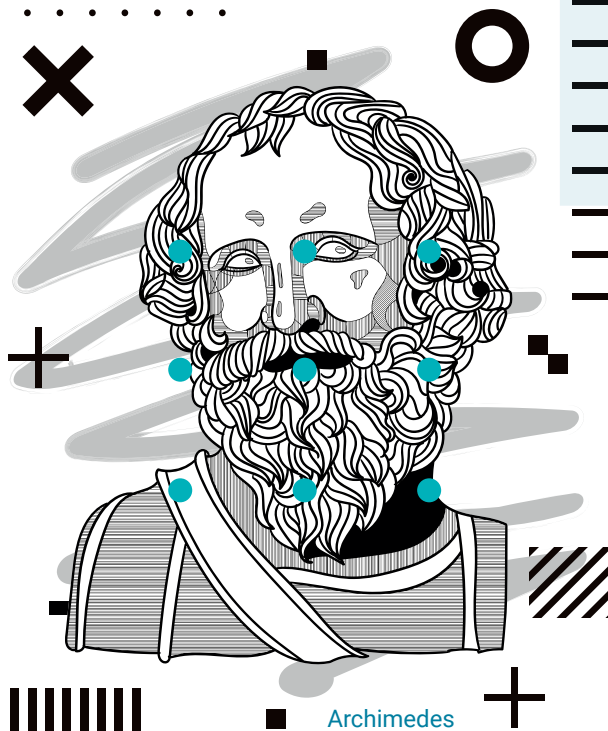
2021

The research programme was relaunched in September 2021 under the heading “Sparkling Science 2.0”. One key focus of the first call for proposals was on the development of citizen science expertise through international networking. With the additional funding programme “Science in schools” there was also an emphasis on the involving schools which had not previously been active participants in this programme or in the communication of science, or which are located in more remote areas of Austria.

The outcome of the first call for proposals In the first round, 34 innovative citizen science projects were awarded funding amounting to a total of 11.5 million euros. The majority of these were started in autumn 2022. The projects are fascinatingly diverse in content and cover numerous academic disciplines, from the natural sciences, engineering and technology, the humanities and social sciences, through to medical science. Topic areas range from multilingualism and inclusion to assistance technologies, energy efficiency, biodiversity, changing global and regional climates and overcoming scepticism towards scientific understanding.

Overall the projects, which will run for two to three years, are expected to involve some 42,000 schoolchildren and about 30,000 other citizen scientists.

Details of the projects and participating institutions, together with media reports, publications and teaching materials developed during the projects, can be found on the OeAD's Sparkling Science website (www.sparklingsscience.at). Coordination and implementation of this research funding programme is handled by the OeAD, the Agency for Education and Internationalisation.



SPARKLING SCIENCE

provides financial support for projects

- that meet recognised standards for scientific research and deliver new findings in the associated fields of research,
- in which the content and methods are designed such that schoolchildren and in some cases other citizen scientists can make a meaningful and identifiable contribution to achieving the research objectives;
- where after completion, the shared activities undertaken during the project result in ongoing collaboration between research and educational institutions, and
- where the teaching and learning materials developed during the course of the project are digitally archived and published so that they can be used again in the future.



SHAPING OUR FUTURE

OF PLASTIC and Green ROOFS

Animal and climate protection are among the urgent tasks that face us now. Generation Z, born around the turn of the millennium, is thus thinking about these issues more than any young generation has ever done before. Sparkling Science projects such as “PLASTIC.ALPS”, “u3Green”, “Recycling Heroes”, “WILDLIFE CRIME” and “Green roof habitats” invite people to get involved in research. The projects give young people a sense of self-efficacy and an idea of how they can use their options to help shape the future. “The future depends on what you do today”, as Mahatma Gandhi already said.



To take part in the “PLASTIC.ALPS” project, all you need to do is install the “DreckSpotz” app on your smartphone, and when you’re out walking, you mark any places where you find rubbish, describe it and ideally also dispose of it properly. The media is full of reports about plastic waste in the oceans and the devastating impact of microplastics on human and animal life. What is less well known, however, is that microplastics are also finding their way into Alpine areas, and being deposited in snow and ice. The objective of the “PLASTIC.ALPS” project is to investigate the extent of plastic pollution in mountain areas, from the highest levels down to the lowlands, with the maximum possible participation of citizen scientists, schoolchildren and interested adults. The DreckSpotz app is used to gather the data. The documentation and classification of plastic waste forms the groundwork through which participating schoolchildren are working with the University of Innsbruck, under the project leadership of Birgit Sattler and environmental NGOs, to develop new strategies for waste management.

The “PLASTIC.ALPS” project is investigating the extent of plastic pollution in mountain areas, from the highest levels down to the lowlands, using the DreckSpotz app.

Change of scene, from the Alps to urban green space: Children and young people have the right to experience nature in the city; planners talk about “urban green space” – but what do children and young people want apart from the usual spaces such as parks and playgrounds? The “U3Green” project aims to address this knowledge gap, and to involve schoolchildren through various different forms of participation. They participate in workshops, using IT and geoinformatics tools, there are practical activities and multi-day work camps designed to facilitate collaboration that is mutually beneficial: The needs of young people can be taken into account in the plans for urban greening projects – and the schoolchildren gain research experience while working to improve their own environment.



RECYCLING HEROES

Topic: Sales figures for electric and electronic devices are rising constantly – which is also causing an ominous increase in the generation of electronic waste (e-waste). This waste also contains valuable components and materials that could be reused.

Project: The stated objective of the Sparkling Science project “Recycling Heroes” is to raise critical awareness of e-waste. The schoolchildren develop a survey and analyse the results to consider what could be done to ensure that waste is disposed of correctly and to increase the recycling rate.

Outcome: Environmentally friendly behaviour and a culture of recycling are strengthened. Participants develop survey tools and foster scientific thinking.

The “Recycling Heroes” project promotes environmentally friendly behaviour and a culture of recycling.

WILDLIFE CRIME

Topic: Illegal trade in wild animals and plants is regarded as organised crime and has become an existential threat for many types of flora and fauna. There is a broad spectrum of forbidden activities; several different occupational and research groups need to work together to ensure that breaches of the law are penalised.

Project: In the Wildlife Crime project, school-children are involved in research processes to determine the extent, background and impact of the illegal trade in wild animals, using example cases. Thanks to the participation of national and international research groups and collaborative partners, the school groups gain insights into the world of international trading in wildlife and into the protection of species.

Outcome: Increased awareness of illegal wildlife trading and an introduction to international research collaborations.

The “**Green roof habitats**” project also tackles a key climate-related topic: In many urban areas, roofs and building facades make up around half of the sealed surfaces. So efforts to improve sustainability in construction place a key focus on green roofs and facades. The advantages from the perspective of construction engineering, such as rainwater capture and heat insulation have been known for a long time and are well documented– but the extent to which “green” building surfaces can help to improve biodiversity and what impact this has on the vegetation is still little known. Researchers at the University of Innsbruck are investigating this question, in collaboration with schools in Tyrol and Vorarlberg that have areas of green roof, and with citizen scientists who have their own green roofs. The project participants record measurements – of temperature, surface moisture, evaporation – and monitor animal life and plants, both on the green roofs themselves and in their immediate surroundings.

LINKS TO THE PROJECTS

www.sparklingscience.at

[/plastic-alps-en.html](http://www.sparklingscience.at/plastic-alps-en.html)

[/u3Green-en.html](http://www.sparklingscience.at/u3Green-en.html)

[/recycling-heroes-en.html](http://www.sparklingscience.at/recycling-heroes-en.html)

[/wildlife-crime-en.html](http://www.sparklingscience.at/wildlife-crime-en.html)

[/green-roof-habitats-en.html](http://www.sparklingscience.at/green-roof-habitats-en.html)

SCIENCE AND DEMOCRACY

THE KNOWLEDGE MISSION

Sparkling Science projects such as “Transform4School”, “We talk about science”, “VisibLL” and “This is (not) Rocket Science!” stand for a way of sharing science in a new inter-relationship where universities change, new places of learning are included, and the experiences of lay people expand or even correct the knowledge of experts.



In “VisibLL”, schoolchildren document non-German shop signs and advertising posters using an app. This creates an overview of Vienna’s linguistic landscape – from coffee shops and kebab take-aways to other small shops – which turns out to include over 100 languages.

“When there’s a knock at the door at five in the morning and I know that it’s the milkman, then I know I’m living in a democracy.” This was how British prime minister Winston Churchill summarised the quality of democracy in his own vivid and idiosyncratic style. This form of government requires ongoing work, however; in the face of global crises and challenges it needs to be defended and fought for constantly. The idea that in-depth discussion of conflicts is worthwhile, is being explored by schoolchildren in Carinthia and Lower Austria, in collaboration with the University of Klagenfurt and Klagenfurt University of Teacher Education, through the project “**Transform4School**”. The basic concept is a simple and persuasive one: instead of democracy being taught in the classroom, it should be learned about through experience, as part of everyday school life. Transform4School is based on the idea that schoolchildren should experience democracy and alternative approaches themselves. At two selected schools in each of these federal states, class representatives are selected on a fundamentally democratic basis, and a school council/parliament is set up, modelled on the elected parliamentary bodies of representative democracies. Transform4School also allows for experimentation with alternative approaches to democracy. The participants/innen are invited to consider problems and issues both inside the school and in the outside world. Episodes of both failure and success are equally valid and useful. The whole project functions as basic research for school development and the further training and development of teachers.

Knowledge transfer is not just one-way process

Science and education helped to establish and uphold modern democracies. In the 19th century the acquisition of scientific understanding was to some extent a key part of the bourgeois self-image. Research was regarded as an appropriate method for understanding and perceiving the world. In those days there were numerous public lectures and debating clubs, where people could keep up to date with the latest research findings. This is the social environment that the Sparkling Science project **"We talk about science"** aims to reconnect with. The University of Graz is investigating how trust in science can be enhanced through participative communication. At the kick-off event the focus was on topics such as "CO₂" and "Radiation". The initial aim was to find out what children and young people knew about these topics. Students who are training to be chemistry teachers responded to open questions. In the next stage, the schoolchildren passed on what they had learned in "Science Cafes", attended by family and friends, so that this information reached a completely new target group compared to when researchers give lectures. In this way knowledge transfer becomes more than just a one-way process – it's more a case of science for all!



Fiery debate is welcome at "We talk about Science": pupils explore scientific research questions and sometimes use unconventional ways to share their knowledge.



Ready for landing: "This is (not) Rocket Science"

QUESTION: ARE THERE WOMEN IN SPACE?

Answer: The proportion of female astronauts is barely more than ten per cent. The Vienna Museum of Science and Technology has gathered a collection of biographies and archives of Austrian space researchers. Young visitors to the museum can meet some of them in person as part of "This is (not) Rocket Science!"

How many languages are spoken in Vienna?

Investigating the role of multilingualism in the everyday life of a city like Vienna is the aim of the project "VisibLL – High school pupils explore the (in)visible multilingualism of the Viennese ,Linguistic Landscape": 100 Vienna pupils between the ages of 15 to 17, and 50 teachers spent three project days exploring the 5th and 8th districts of Vienna, documenting shop signage and advertising posters in languages other than German, using an app. What emerged – from coffee shops and kebab stands to other small shops – was an overview of Vienna's linguistic landscape, which turns out to include over 100 languages. This field research is now being used for ongoing research activities in many different forms: The findings are on display in the Vienna District Museums; an interdisciplinary symposium is planned where pupils will be on the panel of experts; they can also use the findings for their final-year pre-scientific work. And finally, the project also forms the basis for teaching materials.

Living in space?

The project "This is (not) Rocket Science!" makes the giant leap from observing our immediate surroundings to exploring space. In collaboration with the Museum of Science and Technology, pupils from five schools in Vienna are exploring and shaping questions about the future of space science. Children and young people will be affected during their adult lives by the consequences of today's space science and exploration. How will space science evolve from where we are today? What is the point of commercial space travel? Will there be habitable places on the Moon in future – and who would want to live there? Will space be over-exploited for its resources? "This is (not) Rocket Science" aims to bring up some critical perspectives on these questions.



It may look like a drawing class, but in this project, entitled “We talk about science”, the University of Graz is investigating how trust in science can be enhanced through participative communication – and in view of widespread scepticism towards science this is a key research question.

LINKS TO THE PROJECTS

www.sparklingscience.at

[/transform4school-en.html](#)

[/we-talk-about-science-en.html](#)

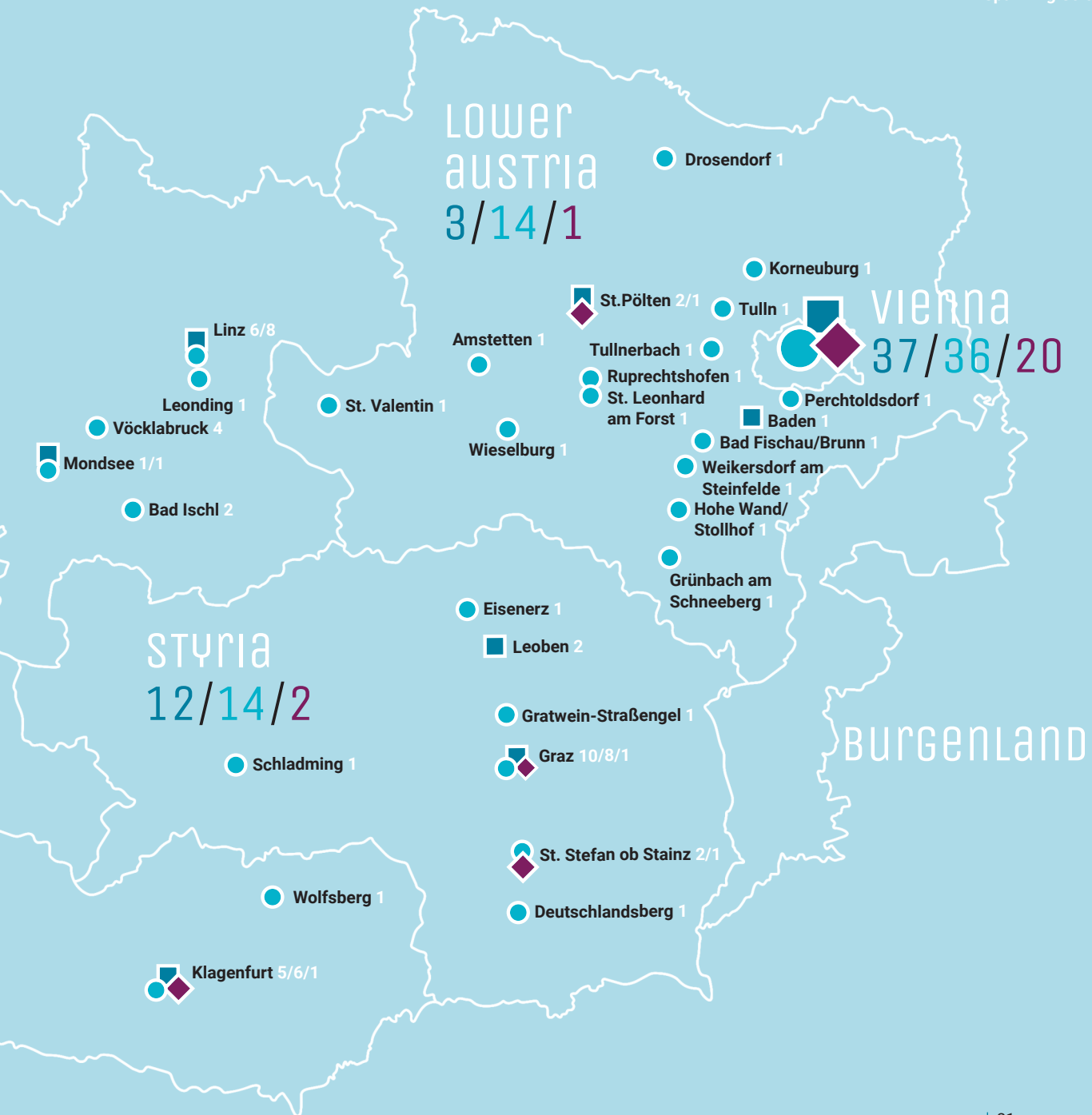
[/visibl-en.html](#)

[/this-is-not-rocket-science-en.html](#)

WHO WHAT WHERE

- Academic research partners: 104
- Schools: 133
- ◆ Partners from business and society: 37







STEM

NOT AFRAID OF FIGURES AND FORMULAE

Sparkling Science projects offer low-threshold educational opportunities, participation overcomes fear of contact and awakens interest in the natural sciences. At the same time, the wealth of data collected can open up surprising new scientific paths – and sometimes the pupils' suggestions flow directly into the research. The projects clearly demonstrate: when you get involved in STEM subjects you get the opportunity to help work on solutions for the future.



“STEM” stands for science, technology, engineering and mathematics – i.e. precisely those sectors of the economy that are driving innovation and that are currently bemoaning a lack of skilled workers. At school, however, maths and science subjects are still amongst those most likely to induce feelings of dread and terror in pupils. Sparkling Science projects such as “Breathing Air”, “DIGIdat”, “Biodiversity of Phoxinus minnows in Austria”, “Relevance of Mathematics Education”, “MAJA” and “Snow2School” are bridging the gap between the needs of the economy and the scientific community on the one hand and the concerns of schoolchildren on the other.

In the “Breathing Air” project, pupils are measuring air pollution on their way to and from school. The photo shows a pupil being told how to use a measuring device. Without the research being done by the schoolchildren, gathering so much data over such a long period of time would be impossible.

The Sparkling Science project **“Breathing Air”** is tackling an issue that we literally encounter thousands of times a day – whenever we breathe in and out – and linking it to the latest research questions.

Sensors for ozone, nitrogen oxides and particulates are already being used in major urban centres to measure air quality. Whilst particulate measurements are typical of the pollution found in built-up areas, so-called ultrafine particles (UFPs), which are less than 100 nm in diameter, have a different distribution pattern – and yet are no less suspected of being harmful to our health. In the “Atem-luft” project, pupils from an academic school in Innsbruck and another in Mittersill are measuring particulate pollution on their journey to and from school. The pupils are using mobile sensors to plot UFP pollution in different seasons and weather conditions. This is giving scientists valuable and highly specific data over a lengthy period of time, while the pupils get training in a scientific way of working by taking measurements independently, gaining an insight into data analysis and having the opportunity to present their findings once the project is complete. The University of Innsbruck is offering the pupils lab days, data workshops and an excursion to the European Organization for Nuclear Research (CERN), where a project is currently studying how clouds form.

DID YOU KNOW

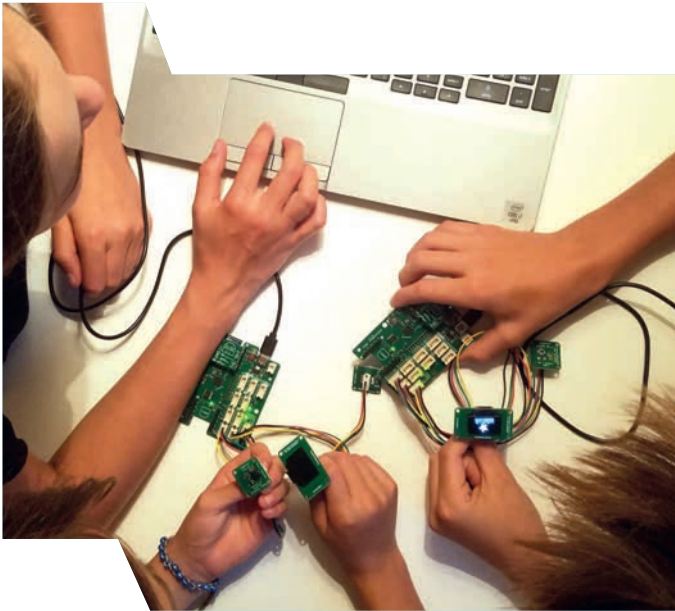
... where the term “algorithm” comes from? “Algorithm” is derived from the name of the polymath al-Khwarizmi, one of the most important mathematicians of the Early Middle Ages, who lived in Baghdad from around 780 to 850 AD and is seen as the founding father of algebra.

... who invented the first algorithm that could be used in a computer? In 1843, the British mathematician Ada Lovelace created a set of instructions for calculating so-called Bernoulli numbers – mathematical sequences of numbers. She is regarded as one of the female pioneers of computer programming.

STEM

Measuring, collecting, analysing

A similar approach is being taken by the “DIGIdat” project, which is also being led by the University of Innsbruck. This time, however, the focus is on the quality of the air inside classrooms – an issue that has become increasingly relevant in the wake of the COVID-19 pandemic. The young people are measuring large volumes of data, grappling with CO₂ and particulate concentrations, and learning how room air quality, thermal comfort and energy efficiency are all inter-linked. The measurements are being collected in an open-access online database, processed as part of the project and analysed. Some 750 schoolchildren from ten schools in Tyrol are involved in the project, thus compiling a collection of data that is quite unique.



In “DIGIdat”, the air in the school classes is being studied – hands-on research.



Joining forces to gain new insights in the project “Biodiversity of Phoxinus minnows in Austria”.

That citizen science projects can have a reach that extends well beyond the school gates is demonstrated by numerous initiatives forming part of the “Sparkling Science 2.0” research promotion programme. One good example is the “**Biodiversity of Phoxinus minnows in Austria**” project, whose team is made up of scientists from the Natural History Museum Vienna (NHM) and the Research Department for Limnology in Mondsee as well as schoolchildren and amateur anglers. They are hoping to gain new insights into the distribution and diversity of minnow species in Austria. Minnows are small schooling fish that live in cold, oxygen-rich bodies of flowing and stagnant water. For over a century, it was believed that there was only a single species in Europe, the common or Eurasian minnow. Today, we know that there are an impressive 23. The project is now attempting to find out how many and which species are native to Austria. Do they occur naturally in a certain area, or were they introduced there? Can their distribution be used to draw conclusions about what kind of environment they need? The concerted efforts of the project team members are providing answers to these questions.

A love of maths

From the river to the classroom and a question that, unfortunately, is asked all too frequently: who actually needs maths? Evidence suggests that anyone who can come up with a positive answer will have an easier time mastering the subject. A project entitled **“Relevance of Mathematics Education”** is now taking precisely this intrinsic motivation as its starting point. The initial aim is to find out what importance schoolchildren themselves attach to their maths lessons. For the first time, seeing things through the young people’s eyes will enable maths teaching to be developed further and thus to familiarise schoolchildren with mathematics as a cultural asset and a discipline packed full of riddles, groundbreaking discoveries and as-as-yet unsolved problems. Another project, **“MAJA”** (Mathematical algorithms analysed for everybody) , is pursuing a similar goal. Mathematical algorithms are everywhere in today’s world. They form the basis for online searches, the visual representation and encryption of data, and complex computer simulations and analyses. “MAJA” is about explaining how mathematical algorithms work in easy-to-understand language. Researchers at the University of Salzburg and the Salzburg University of Education are gaining valuable input from the Salzburg schoolchildren involved in the project, who are helping to convey the world of algorithms with their unprejudiced views and new ideas.

MEASURING THE SNOW FROM YESTERDAY

In **“Snow2School”**, an interdisciplinary Sparkling Science project, schoolchildren from Styria and Greenland are helping to reconstruct past changes in snow conditions in Greenland. This is because, although snow plays a key role in the life of the Greenlandic people, they only have a handful of measurements covering the past 150 years. The project is bringing together photographs and footage with stories and memories recounted by locals in order to be able to make sound statements about the changes in climatic and environmental conditions that have affected these parts of the world. The pupils are making a practical contribution to the project by measuring current snow levels, which is giving them a better understanding of how climate change is impacting on people’s lives.



LINKS TO THE PROJECTS

www.sparklingsscience.at

[/breathing-air-en.html](http://www.sparklingsscience.at/breathing-air-en.html)

[/digidat-en.html](http://www.sparklingsscience.at/digidat-en.html)

[/phoxinus-minnows-en.html](http://www.sparklingsscience.at/phoxinus-minnows-en.html)

[/mathematics-education-en.html](http://www.sparklingsscience.at/mathematics-education-en.html)

[/snow2school-en.html](http://www.sparklingsscience.at/snow2school-en.html)

ONE DAY THERE WILL BE ... YOUHEALTH

“ In the project **“One day there will be ...”** we want to enable primary schoolchildren to learn how to rewrite the future. For this purpose, the children learn about fairy tales with a regional connection to raw materials and then contribute their own experiences during research-based learning in workshops. We would like to accompany the primary schoolchildren in designing a future themselves and in being a part of this change in the so-called “Anthropocene”.

Prof. Mag. Dr. Robert Kamper,
Head of the “One day there will be ...” project



[www.sparklingscience.at](http://www.sparklingscience.at/one-day-there-will-be-en.html)
[/one-day-there-will-be-en.html](http://www.sparklingscience.at/one-day-there-will-be-en.html)

“ The Sparkling Science Project **“YOUhealth”** offers the unique opportunity to develop a health promotion project together with the target group – young people – and to test its efficiency in promoting the cardiovascular health of both pupils and their parents. The collaboration of medical and nursing researchers with schoolchildren, parents and faculty enables comprehensive health education; the participatory approach is intended to increase the success of the health promotion.

Assoz.-Prof. Priv.-Doz. Dr. Michael Knoflach,
Head of the “YOUhealth” project



[www.sparklingscience.at](http://www.sparklingscience.at/youhealth-en.html)
[/youhealth-en.html](http://www.sparklingscience.at/youhealth-en.html)

eat+CHANGE

” In the joint research on challenges of sustainable eating practices in the everyday life and environment of young people, the pupils involved in the “**EAT+CHANGE**” project pursue their own perspectives and questions about the research topic. As academic researchers, this lets us experience how participatory work creates spaces of opportunity in which young people can perceive themselves both as researchers and as disseminators of the results. Our experience working on this project so far shows that, on the one hand, we can do valuable basic research together and, on the other hand, the pupils develop an awareness of the importance of participation in knowledge-production and dissemination.

Ass.-Prof. Dr. Fabian Pettig,
Head of the “EAT+CHANGE” project

[www.sparklingscience.at](http://www.sparklingscience.at/eat-and-change-en.html)
/eat-and-change-en.html

REFLECTING MINDS

” For me, working on the “**Reflecting Minds**” project with the schoolchildren is always exciting. For one, I notice how they observe things really closely and spot changes. For another, the dynamic within the group has also changed. They discuss a lot of things openly. In my field, I think it’s very good preparation for working with under-fours in a nursery.

Karin Baumann, Participating teacher
“Reflecting Minds” project

[www.sparklingscience.at](http://www.sparklingscience.at/reflecting-minds-en.html)
/reflecting-minds-en.html



CULTURE and SOCIETY

NEW FORMS AND FORMATS

Where does science begin? As a rule, with a certain interest in the questions that preoccupy society, and a curiosity about a topic or a certain phenomenon. In the broad field of society and culture, the Sparkling Science projects implemented by the OeAD on behalf of the Federal Ministry of Education, Science and Research (BMBWF) reflect many such issues: From a circus to a storytelling café, from basic research to the further development of education, the projects play a leading role when it comes to new formats for acquiring and imparting knowledge.



The projects in this section all have one thing in common: the quest for new forms and formats for teaching and communicating science. Take the **“Circus of Knowledge”** project, for instance: in partnership with Johannes Kepler University Linz, it is using tools borrowed from the circus to share knowledge with its audience, some of whom are very young indeed. Playing the role of ringmaster, theatre producer Airan Berg calls the artists and scientists into the ring to wow the assembled crowd. Together with nine schools in Upper Austria, the Sparkling Science project is now exploring whether scientific issues can be investigated using artistic means. As well as trialling the new formats, the school-children are also actively involved on the scientific side of the projects.

The **“MEMMIG”** Sparkling Science project is contributing valuable basic research with its recordings of oral history.



“Colonialism today? What does that have to do with me?” is scrutinising the colonial origins of artefacts in the NHM.

Reappraising the museum’s collection

From knowledge as a tourist attraction to a project that asks tricky questions – and attempts to convey them in a new way: many museums across Europe are currently conducting a re-appraisal of the items they hold. Numerous cultural institutions, including many founded during the colonial period, have collections made up partly of objects acquired by questionable means. Many museums are starting to take a critical look at the occasionally dubious origins of the items in their care. The Natural History Museum Vienna (NHM) is adopting a unique approach. Taking its Brazil exhibition as an example, it is confronting the colonial origins of its artefacts head on with the help of the project entitled “**Colonialism today? What does that have to do with me?**”. A group of seventeen-year-olds from an academic school in Vienna are examining the collection together with researchers from the museum. As well as a dedicated exhibition, their findings will also produce a new teaching format developed through their joint efforts. In an ideal scenario, therefore, the pupils will help to come up with a new idea of what an exhibition should be and what it should convey.

MULTILINGUALISM AT NURSERY SCHOOL

Many children in Austria grow up speaking several languages, something that is also reflected in the day-to-day life of a nursery school. It poses a challenge for early childhood educators, who are expected to support children in their linguistic environment and foster the potential harboured by multilingualism. The project entitled “**Researching and transforming multilingual spaces**” is compiling a number of ethnographical studies on multilingualism, with schoolchildren’s own experiences being incorporated into teacher training in the form of the stories that they tell.

Everyday stories of migration

Another research project that simply would not be possible without a great deal of help from schoolchildren is **“MEMMIG: Multilingual memories of migration”**. Eight schools from Vienna and Lower Austria with a high percentage of pupils from a migration background are collaborating with researchers from the Austrian Academy of Sciences. Young people aged 15 to 18 are conducting interviews with representatives of the older generation to produce a grand total of around 70 interviews in at least 20 languages. German translations of these interviews will then be available to access online in the Österreichische Mediathek media library. As well as learning more about their own family history, the schoolchildren are also familiarising themselves with methods used in oral history – the form of historical research that draws on oral narrative. They are conducting the audio interviews themselves and address the issue of multilingualism in a positive way. The pupils have access to interviewees whom researchers would find it hard if not impossible to seek out. This collection of sources is the most important of the project’s results and can be a springboard for further research.

Another project, **“Caring cultures in end-of-life care”** is making its own contribution to intergenerational research. For pupils at the Caritas School for Social Care Professions and nursing students, during their internships is often the first time they encounter dying patients or people with dementia. The project aims to create a space in which these experiences can be shared in storytelling cafés and reflected on in one-to-one interviews. The conversations are being recorded and studied together with researchers from the University of Vienna, incorporated into training and continuing professional development measures.

WHAT IS MIGRANTOLOGY?

For a long time, migration research was focused primarily on studying migrants from the perspective of majority groups in society, an approach that has since been criticised as “migrantology”. New angles are now being developed. The “MEMMIG” Sparkling Science project is contributing valuable basic research with its recordings of oral history.



Museums are currently reappraising their collections, and the “Colonialism today? What does that have to do with me?” project is following their efforts closely.

LINKS TO THE PROJECTS

www.sparklingscience.at

[/circus-of-knowledge-en.html](#)

[/colonialism-today-en.html](#)

[/multilingual-spaces-en.html](#)

[/memmig-en.html](#)

[/caring-cultures-en.html](#)

FACTS + FIGURES I

Key information on the projects funded from the first call for proposals

168

valid proposals
submitted

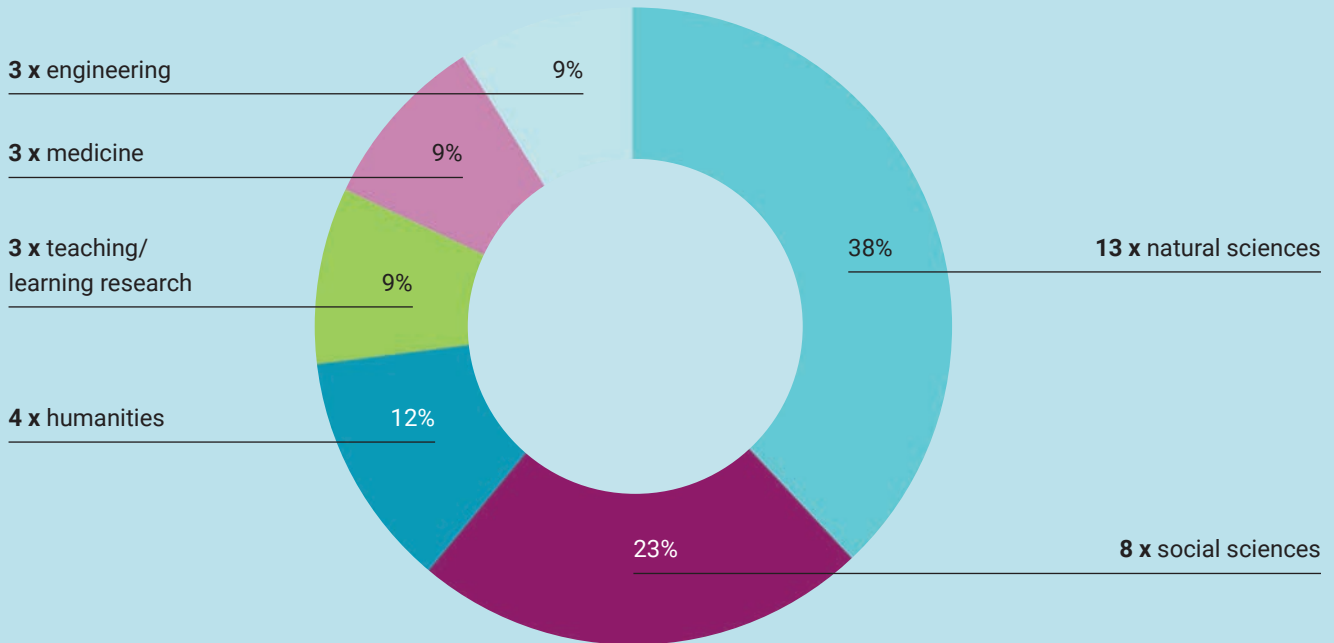
34

proposals
funded

11.5 MIL. EUROS

in total funding

Academic and scientific disciplines



Expected reach (number of people)

The research promotion programme aims to reach a total of

73,840 people.

42,865

schoolchildren involved,

of whom **8,035** directly and **34,830** indirectly

30,975

more citizen scientists likely to be involved

Data as of Dec. 2022



INCLUSION

EQUAL OPPORTUNITIES – MORE THAN JUST EMPTY WORDS

Sparkling Science projects such as “Smart Sport Assistance” and “Be PART of it!” exemplify the innovative research approach of the research projects – and show the unimagined possibilities that lie in “Open Innovation”. This approach deliberately crosses borders, not just geographic but also of organisations, industries and disciplines in order to develop new knowledge and daring products.



The issue of inclusion in schools throws up a whole host of questions. Nowhere is this more pertinent than in sports lessons, where children with a visual impairment often feel left out. Blind and visually impaired pupils frequently speak of the frustration they experience during PE lessons. However, technical assistance systems can help break down barriers, as the “**Smart Sport Assistance**” Sparkling Science project is demonstrating: here, schoolchildren with and without visual impairments are working together to develop assistance systems. As well as improving acceptance amongst young people, this also means that the assistance systems are aligned closely with the daily lives and needs of young people. The project is based on the conversations between the schoolchildren who are developing prototypes and testing them out in hands-on activities and trial events.

An end to frustrating PE lessons: Technical assistance systems can help break down barriers. The “Smart Sport Assistance” project lets schoolchildren with and without visual impairments work together to develop assistance systems.

“Be PART of it!” is another project that could not have got off the ground without pupils’ efforts. It involves telepresence systems that help schoolchildren with chronic conditions keep in touch with their peers. The avatar “AV1” is being developed to allow schoolchildren to be part of the gang virtually even if they are going to be physically absent for a lengthy period of time. The schoolchildren and the young patients are involved in the project as “co-research teams”, so to speak. They are being supervised by an interdisciplinary project group made up of experts in psychology, pedagogy, engineering and educational science. Besides collecting data, the project is also aiming to develop an app to accompany the use of the avatar. What this app will actually look like, what it is to be expected to do, what tools are to be developed – all of this is still completely open for exploration. The co-researchers will provide the answers.

LINKS TO THE PROJECTS

www.sparklingscience.at

[/smart-sport-assistance-en.html](http://www.sparklingscience.at/smart-sport-assistance-en.html)

[/be-part-of-it-en.html](http://www.sparklingscience.at/be-part-of-it-en.html)



IN THE LAB

YOUTH RESEARCHES

Many Sparkling Science projects involve schoolchildren working in laboratories, where they are learning new techniques. Projects such as “CO₂ Conversion”, “Aquirufa”, “Micro-Tramper” and “Colic & Butyrate” are providing a shining example of how both research institutions and young people can benefit from a partnership that is as innovative as it is unconventional.

Science and technology is everywhere in our society. Understanding the modern world is difficult without a basic idea of the scientific and technological concepts that hold it together. Active learning and direct contact between children and young people and scientists in laboratories are still by far the best ways to teach and learn about precisely these subjects. Several Sparkling Science projects are seeing universities and research institutions open up their laboratories, enabling pupils to work with cutting-edge equipment and learn techniques that go well beyond what they would usually be covering in science lessons.



The genus of bacteria known as Aquirufa was discovered by schoolchildren. The Sparkling Science project is investigating the importance of microbial life for freshwater habitats.

Basic research and model systems

Global carbon emissions will need to be reduced permanently if we are to combat global heating and achieve our climate targets. An ambitious project entitled **“CO₂ Conversion: from harmful exhaust gas to a resource – CO₂ as a valuable raw material”** aims to spark a rethink within Austrian industry and help to develop pilot systems that can exploit this gas. The Higher Technical Education Institute in Innsbruck and Kramsach and scientists from the University of Leoben are presenting case studies from and for the benefit of industry. First of all, the schoolchildren work with researchers to investigate whether chemical transformations that are feasible in the lab would also work on a large scale. The key question is this: how would a large-scale reactor need to be built in order to heat up and convert the gases reacting inside it fast enough? To this end, pupils whose focus is chemical engineering are building a small-scale pilot system at their school to calculate the cost of constructing and operating such a reactor based on their model. Pupils of graphic and communications design will then present the project’s findings on a website. The plan is to produce both academic papers and easily accessible publications, with comics, graphic novels, short films, games and an exhibition all in the pipeline in order to reach as broad a target group as possible.

An immense volume of data

The schoolchildren’s efforts are handing scientists and researchers invaluable amounts of data – a quantity of facts and figures that, using conventional methods, could only be obtained with a great deal of time and effort. One such example is the **“Aquirufa”** project. Bacteria drive material cycles that are vital to the existence of our ecosphere. We know surprisingly little about these tiny helpers given how important they are for us: several million species of bacteria are believed to exist, of which 20,000 have been named and described. The “Aquirufa” genus of bacteria, which was discovered and presented to the scientific community in partnership with schoolchildren, is the focus of the research being done in the project led by the University of Innsbruck – as well as lending it its name. Six upper-school classes and other groups of citizen scientists are working together to collect water samples and subject them to microbiological processes using state-of-the-art molecular methods such as the high-throughput sequencing of marker genes and genome sequencing. The work being done on “Aquirufa” is helping to communicate the importance of microbial life for bodies of water. The junior researchers are involved from the start of the process right through to publication in specialist journals.

Contact with the target group

The “**Micro-Tramper**” project is bringing findings from the world of food research to a target group that would otherwise be difficult to reach: small, family-run businesses. “Micro-Tramper” is investigating microbial flows along the food production chain in order to study the genomes of relevant microbes in food production and decipher microbial genes involved in the maturing process of fermented foods. Pupils from five schools of agriculture and food science from five different provinces are collaborating with researchers from the University of Veterinary Medicine, Vienna. Working in their schools’ own food science kitchens and at their parents’ companies, they are taking samples of a cheese made specially for the purpose at different stages of its ripening. Microbial DNA is extracted from the samples and the microbial composition is determined; on the basis of the data obtained, the pupils can evaluate hygiene measures and discuss optimisations together with the small businesses, detect the loss of food and implement disinfection measures.

LINKS TO THE PROJECTS

www.sparklingscience.at

[/co2-conversion-en.html](#)

[/aquirufa-en.html](#)

[/micro-tramper-en.html](#)

[/colic-and-butyrate-en.html](#)



Thanks to “Micro-Tramper”, food research reaches small farms directly.

DID YOU KNOW

that the digestive tract of horses forms a complex, highly sensitive ecosystem and is a common cause of severe, sometimes life-threatening diseases, which are summarised under the term “colic”? In the Sparkling-Science project “Colic & butyrate”, pupils are investigating how the microbiota, the totality of microorganisms in healthy horses, is composed, how it changes due to everyday influences and how this affects (intestinal) health. The aim is to find therapeutic measures against colic.

INTERVIEW

OF HIGH PERFORMANCE, STELLAR MOMENTS AND COOL MOUNTAIN TOURS

Research together with pupils is a concept that deserves more recognition: a roundtable discussion of current Sparkling Science projects with Ursula Gärtner, Juliane Stark, Andreas Traweger and Lars Keller.



Glaciers are being filmed in the project “Freeze For Future – Glacier worlds”.

What role do schoolchildren play in your project?

Ursula Gärtner Latin inscriptions from antiquity to the present are still very common. In the “LIDAL” project, the pupils collect and document such inscriptions and we prepare them together didactically; in doing so, they slip into the role of a textbook author, so to speak. The research results are incorporated into a web portal that provides instructions for translating the inscriptions and placing them in their historical context. It is also possible to take a virtual tour and, for example, learn vocabulary and grammar in this vivid manner.

Juliane Stark The project “TRA:WELL – Transport and Wellbeing” basically investigates how active and independent mobility is related to children’s well-being. The schoolchildren help develop survey instruments, for example, and also apply them themselves – in doing so, they slip into the role of scientists.

Andreas Traweger “SPARCling Matrix” is a biomedical research project. We are studying the role of the matricellular protein SPARC in tendon disease and healing. Our partner school is the Higher Technical Education Institute Salzburg, we are working with pupils in their final year majoring in “Biomedicine and Health Technology” to create AI-based software for the evaluation of histological sections.

Lars Keller “Freeze for Future” makes a significant contribution to climate change education, so pupils are at the heart of all our efforts: Since 2010, we have been climbing glaciers with schoolchildren to make climate change tangible. In “Freeze for Future” we are now “filming” the glaciers with laser scanning technology in order to preserve the glacier worlds, at least virtually, for future generations.

To what extent does your research project benefit from the participation of the young people?

Ursula Gärtner Thanks to their collecting activities we gain access to a unique wealth and variety of data that we would otherwise never have been able to obtain. But the project also enables us to better understand the schoolchildren’s view in the learning process.

Juliane Stark The participation of the schoolchildren is essential for the project’s success because, for example, they help us develop methods to survey children’s attitudes, well-being and physical activity profiles. Sometimes methods and survey instruments are really only optimised for adults. This project is in the area of basic research and it makes an important interdisciplinary contribution to the way we see transport or mobility and health.

Andreas Traweger We work at eye level: the technical input comes from us, the programming know-how from the young people. Since my research team is not versed in this area, implementing this part of the project would not be possible without the pupils.

Lars Keller Together with the young people, we locate those places and aha experiences on the glacier and in the foreland that are particularly suitable for learning about climate change and then we develop the virtual reality glacier worlds together. It is a pioneering project for everyone involved.

What is the added value for the pupils?

Ursula Gärtner They are taking part in an international pupils’ congress, that is a stellar moment! They also gain sound insights into academic work, acquire media skills and experience first-hand how teaching materials are created.

Juliane Stark With our project, too, they learn about research methods that they are actively involved in (further) developing and that, in their point of view, describe the complexity of mobility-related decisions. We take their needs seriously; these should be the basis for designing a safe transport space that promotes active mobility.

Andreas Traweger The pupils are involved in a research topic that is very relevant today and in the course of the project they also have the opportunity to work with experts from the University of Applied Sciences Salzburg in the field of medical image analysis. This also gives them valuable insights into future jobs – the field of AI is booming in biomedicine.

Lars Keller When you stand at the glacier and measure rock surfaces that are 50 degrees hot and the water is just flowing down – then you really understand climate change. And when you figure out for yourself how learning and understanding works, you have gained a lot regarding how to shape your own future education.

What are the challenges?

Ursula Gärtner We work with about 200 pupils from several schools, this takes a huge organisational effort. It’s incredibly difficult to find dates where we can all work – everyone’s schedule is so tight.

Juliane Stark I agree with that! In addition, we struggle a lot with obtaining permissions and with data protection.

Andreas Traweger “SPARCling Matrix” is a three-year project. Since we always work with the graduating class, bridging the holiday period is a challenge for us.

Lars Keller When we started with projects of this kind, it already seemed a challenge to run research weeks in the high mountains with 120 young people; in the meantime we have taken almost 4000 young people up. As with mountaineering, everything has two sides, the arduous and the beautiful. I have got into the habit of focusing on the beautiful.

What personal experiences have you had with Sparkling Science projects?

Ursula Gärtner I am delighted by the joy and enthusiasm of the pupils.

Juliane Stark Me too, as well as their willingness to get involved as soon as they realise that you are really interested in their needs.

Andreas Traweger For me, it is surprising every time the young people come up with ideas that we would never have thought of. Often they are seemingly simple questions, that turn out to be incredibly difficult to answer, and in the end they bring us forward.

Lars Keller Our projects are about how education in sustainable development can succeed; each person makes of it what he or she can and wants to. We have had many pupils who, after this experience, have transformed their parents' businesses, turned their communities into climate communities, or taken specific career paths.

What should change at “Sparkling Science”?

Ursula Gärtner It is enormously important not only to continue “Sparkling Science”, but to expand it even more. Sparkling Science projects deliver high quality research results, are enormously time-consuming to implement and deserve much more recognition from the public, within universities and ministries.

Juliane Stark I agree. The projects are extremely complex, require a high degree of organisation and coordination, and are sometimes seen as purely “educational projects” rather than “research projects” – although in my experience they have a high scientific output: these are top quality achievements.

Andreas Traweger I can fully support this. “Sparkling Science” is one of the best funding programmes to bring science to the public. Both pupils and teachers are important multipliers. I am also missing the equal status at the university level with other funding programmes.

Lars Keller We know from teaching and learning research that knowledge alone is not enough, especially when it comes to topics like climate change. We need a different form of education that develops competencies and, above all, focuses on values. We have reached several thousand pupils with our research projects so far, and for many it has been a life-changing experience, a wake-up call to get involved and give their own lives a new twist, maybe even a new meaning.

Ursula Gärtner studied Protestant Theology, Classical Philology, Medieval Latin and Hebrew at the Universities of Heidelberg, Freiburg, Basel and Pittsburgh, completing her doctorate in 1992. From 1993 to 2000 she worked at the University of Leipzig, then she was Professor of Classical Philology in Potsdam. Since 2016, Gärtner has been Professor of Classical Philology/Latin Studies at the University of Graz.

Juliane Stark studied Land Culture and Environmental Protection at the University of Rostock; since 2004 she has worked in various functions at the Institute of Transport Studies at the University of Natural Resources and Applied Life Sciences, Vienna. She completed her doctorate there in 2010, followed by her habilitation in Transport Planning in 2019. She has been Deputy Director of the Institute of Transport Studies since 2015.

Andreas Traweger studied genetics at the Paris Lodron University of Salzburg and received his doctorate there in 2003. He went to Mount Sinai Hospital in Toronto as a Postdoctoral Fellow from 2004 to 2008, after which he worked for an international company. He has been working at Paracelsus Medical Private University (PMU) in Salzburg since 2012; from 2015 as Director of the Institute for Tendon and Bone Regeneration and since 2018 as research professor for Regenerative Biology.

Lars Keller studied Geography and Economic Education, English and Italian at the LMU Munich and the University of Innsbruck and obtained his doctorate and habilitation in Geography. He researched and taught not only in Innsbruck, but also in Great Britain, Italy, France, Iceland and Malta. Since 2022, he has been Professor of “Education for Sustainable Development” at the University of Innsbruck, which is unique in Austria.

LINKS TO THE PROJECTS

www.sparklingsscience.at

[/lidal-en.html](#)

[/tra-well-en.html](#)

[/sparcling-matrix-en.html](#)

[/fff-glacier-worlds-en.html](#)

FACTS + FIGURES II

Key information on the projects funded from the first call for proposals

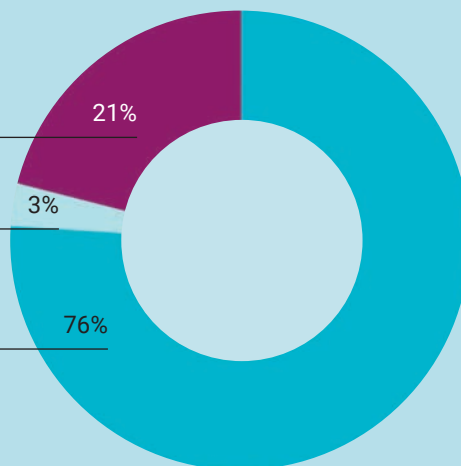
Project management

by institution

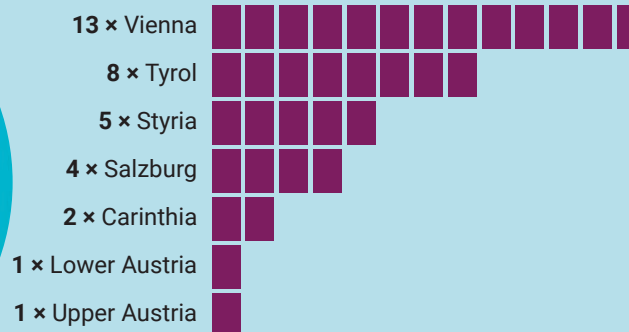
7 projects at six non-university research institutions

1 project at a university for teacher education

26 projects at 11 universities

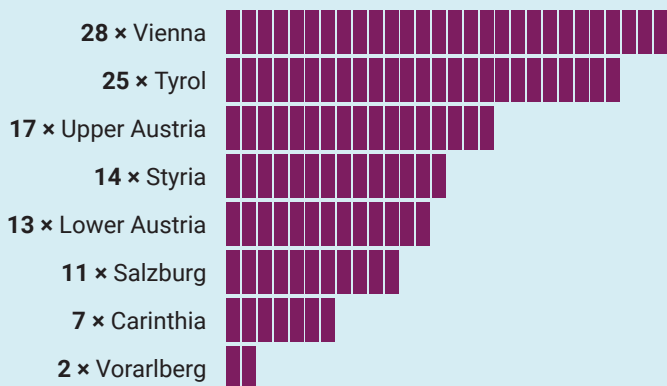


by federal state

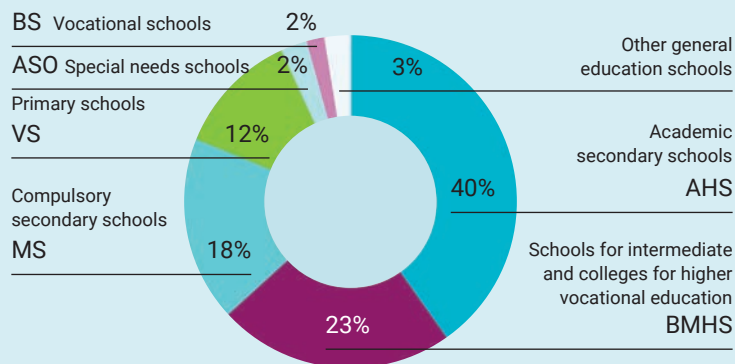


Partner schools in Austria

by federal state



by school type



- 47 AHS – Academic secondary schools
- 27 BMHS – Schools for intermediate and colleges for higher vocational education
- 21 MS – Compulsory secondary schools
- 14 VS – Primary schools
- 3 ASO – Special needs schools
- 2 BS – Vocational schools
- 3 Other academic secondary schools (statute)

57 Scientific cooperation partners

41

Partners in Austria

- 9 universities
- 4 universities of applied sciences
- 8 universities for teacher education
- 20 non-university research institutions, scientific associations and non-profit associations or organisations, limited liability companies or NGOs

16

International partners

- 5 × Germany
- 1 × Switzerland
- 1 × Poland
- 1 × Australia
- 1 × Turkey
- 1 × United Kingdom
- 2 × Italy
- 1 × Luxembourg
- 1 × Sweden
- 1 × Thailand
- 1 × United States

41 Cooperation partners

from business and society

4 international partners (3 × Germany, 1 × United Kingdom)

122 Partner schools

117 in Austria + 5 International (3 × Germany, 2 × Greenland)

AN OVERVIEW OF ALL THE PROJECTS FUNDED FROM THE FIRST CALL FOR PROPOSALS



Nicolaus Copernicus

Projects with an asterisk (*) in the title also involve other Citizen Scientists in the research process in addition to schoolchildren.

Humanities

- * **LIDAL – Latin inscriptions for digital and extracurricular learning: SISTE VIATOR.** Latin in Stone 2.0
[PROJECT MANAGEMENT](#)
Ursula Gärtner, University of Graz
[PROJECT DURATION](#)
1/9/2022 – 31/8/2025
www.sparklingscience.at/lidal-en.html

- MEMMIG: Multilingual memories of migration.** Pupils and students conduct intergenerational interviews
[PROJECT MANAGEMENT](#)
Georg Traska, Austrian Academy of Sciences
[PROJECT DURATION](#)
1/11/2022 – 31/8/2025
<https://sparklingscience.at/memmig-en.html>

- This is (not) Rocket Science!** Citizen Scientists as Mission Control
[PROJECT MANAGEMENT](#)
Martina Griesser-Stermscheg, Vienna Museum of Science and Technology with the Austrian Media Library
[PROJECT DURATION](#)
1/10/2022 – 30/9/2025
www.sparklingscience.at/this-is-not-rocket-science-en.html

- * **VisibLL:** High school students explore the (in)visible multilingualism of the Viennese ‚Linguistic Landscape‘
[PROJECT MANAGEMENT](#)
Barbara Soukup, University of Vienna
[PROJECT DURATION](#)
1/10/2022 – 31/7/2025
www.sparklingscience.at/visibll-en.html

Medicine

- Colic & butyrate: Panacea butyrate?** Evaluation of production, effect and therapeutic potential in the equine colon
[PROJECT MANAGEMENT](#)
Franziska Dengler, University of Veterinary Medicine Vienna
[PROJECT DURATION](#)
1/9/2022 – 31/8/2025
www.sparklingscience.at/colic-and-butyrate-en.html

- * **SPARClng Matrix:** The essential role of the matricellular protein SPARC in tendon disease and healing
[PROJECT MANAGEMENT](#)
Andreas Traweger, Paracelsus Medical Private University, Salzburg
[PROJECT DURATION](#)
1/10/2022 – 30/9/2025
www.sparklingscience.at/sparclng-matrix-en.html

- * **YOUhealth:** A participative approach for health promotion in pupils
[PROJECT MANAGEMENT](#)
Michael Knoflach, VASCage GmbH, Innsbruck
[PROJECT DURATION](#)
1/9/2022 – 28/2/2025
www.sparklingscience.at/youhealth-en.html

Natural sciences

* **Aquirufa:** Biodiversity and ecology of freshwater bacteria
[PROJECT MANAGEMENT](#)
 Martin Hahn, University of Innsbruck
[PROJECT DURATION](#)
 1/9/2022 – 31/8/2025
www.sparklingscience.at/aquirufa-en.html

* **Biodiversity of Phoxinus minnows in Austria:** Small fish make it big
[PROJECT MANAGEMENT](#)
 Anja Palandačić, Museum of Natural History Vienna
[PROJECT DURATION](#)
 1/10/2022 – 30/9/2025
www.sparklingscience.at/phoxinus-minnows-en.html

Breathing Air: Analysis of typical exposure to the chemical mix of respirable ultrafine particles in rural and urban valley locations
[PROJECT MANAGEMENT](#)
 Armin Hansel, University of Innsbruck
[PROJECT DURATION](#)
 1/1/2023 – 31/12/2025
www.sparklingscience.at/breathing-air-en.html

* **CO₂ Conversion:** From harmful exhaust gas to a resource – CO₂ as a valuable raw material
[PROJECT MANAGEMENT](#)
 Christoph Rameshan, Montanuniversität Leoben
[PROJECT DURATION](#)
 1/10/2022 – 30/9/2025
www.sparklingscience.at/co2-conversion-en.html

* **Green roof habitats:** Habitats facing climate change and biodiversity crisis
[PROJECT MANAGEMENT](#)
 Johannes Rüdissler, University of Innsbruck
[PROJECT DURATION](#)
 1/11/2022 – 31/10/2025
www.sparklingscience.at/green-roof-habitats-en.html

MAJA: Mathematical algorithms analysed for everybody
[PROJECT MANAGEMENT](#)
 Clemens Fuchs, University of Salzburg
[PROJECT DURATION](#)
 1/10/2022 – 30/9/2025
www.sparklingscience.at/maja-en.html

* **Micro-Tramper:** Microbial dynamics along the food chain
[PROJECT MANAGEMENT](#)
 Evelyne Selberherr, University of Veterinary Medicine Vienna
[PROJECT DURATION](#)
 1/10/2022 – 30/9/2025
www.sparklingscience.at/micro-tramper-en.html

* **PLASTIC.ALPS:** Distribution and impact of microplastics in sensitive high alpine environments
[PROJECT MANAGEMENT](#)
 Birgit Sattler, University of Innsbruck
[PROJECT DURATION](#)
 1/10/2022 – 30/9/2025
www.sparklingscience.at/plastic-alps-en.html

Relevance of mathematics education from the perspective of pupils
[PROJECT MANAGEMENT](#)
 David Kollosche, University of Klagenfurt
[PROJECT DURATION](#)
 1/9/2023 – 31/8/2026
www.sparklingscience.at/mathematics-education-en.html

TRA:WELL: Transport and Wellbeing
[PROJECT MANAGEMENT](#)
 Juliane Stark, University of Natural Resources and Life Sciences, Vienna
[PROJECT DURATION](#)
 1/9/2022 – 31/10/2024
www.sparklingscience.at/tra-well-en.html

* **u3Green:** Promotion of child- and youth-friendly urban landscapes through participatory research on urban green
[PROJECT MANAGEMENT](#)
 Sabine Hennig, University of Salzburg
[PROJECT DURATION](#)
 1/10/2022 – 30/9/2025
www.sparklingscience.at/u3Green-en.html

* **We talk about science:** Fostering communication about scientific issues

[PROJECT MANAGEMENT](#)

Philipp Spitzer, University of Graz

[PROJECT DURATION](#)

1/10/2022 – 30/9/2025

[www.sparklingscience.at/
we-talk-about-science-en.html](http://www.sparklingscience.at/we-talk-about-science-en.html)

* **WILDLIFE CRIME:** Discovering and uncovering: Detective work in the name of species protection

[PROJEKTLEITUNG](#)

Silke Schweiger, Museum of Natural History Vienna

[PROJECT DURATION](#)

1/9/2022 – 31/12/2024

[www.sparklingscience.at/
wildlife-crime-en.html](http://www.sparklingscience.at/wildlife-crime-en.html)

Social sciences

Be PART of it! Participatory research on a telepresence system and its impact on social inclusion in schools

[PROJECT MANAGEMENT](#)

Thomas Pletschko, Medical University of Vienna

[PROJECT DURATION](#)

1/9/2022 – 31/8/2024

[www.sparklingscience.at/
be-part-of-it-en.html](http://www.sparklingscience.at/be-part-of-it-en.html)

* **Caring cultures in end-of-life care:**

Talking about caring cultures in end-of-life care. Pupils and Citizen Scientists conduct in intercultural and intergenerational research

[PROJECT MANAGEMENT](#)

Katharina Heimerl, University of Vienna

[PROJECT DURATION](#)

1/10/2022 – 30/9/2025

[www.sparklingscience.at/
caring-cultures-en.html](http://www.sparklingscience.at/caring-cultures-en.html)

Colonialism today? What does that have to do with me?: Post-colonial approaches to knowledge transfer in a natural history museum

[PROJECT MANAGEMENT](#)

Angela Wieser, EDUCULT, Vienna

[PROJECT DURATION](#)

1/9/2022 – 29/2/2024

[www.sparklingscience.at/
colonialism-today-en.html](http://www.sparklingscience.at/colonialism-today-en.html)

EAT+CHANGE: Food consumption as everyday transformation: participatory research and collaborative learning for social-ecological change

[PROJECT MANAGEMENT](#)

Fabian Pettig, University of Graz

[PROJECT DURATION](#)

1/10/2022 – 30/9/2025

[www.sparklingscience.at/
eat-and-change-en.html](http://www.sparklingscience.at/eat-and-change-en.html)

Reflecting Minds Development of a mentalisation training for elementary educators

[PROJECT MANAGEMENT](#)

Beate Priewasser, Paracelsus Medical Private University, Salzburg

[PROJECT DURATION](#)

1/9/2022 – 30/9/2024

[www.sparklingscience.at/
reflecting-minds-en.html](http://www.sparklingscience.at/reflecting-minds-en.html)



Isaac Newton

* **Researching and transforming multilingual spaces:** Multilingualism in pedagogical professionalisation for preschool
[PROJECT MANAGEMENT](#)
 Nadja Thoma, University of Innsbruck
[PROJECT DURATION](#)
 1/4/2023 – 31/3/2026
www.sparklingscience.at/multilingual-spaces-en.html

Snow2School: An interdisciplinary approach to recording changes in snow in Greenland and Austria
[PROJECT MANAGEMENT](#)
 Wolfgang Schöner, University of Graz
[PROJECT DURATION](#)
 1/1/2023 – 31/12/2025
www.sparklingscience.at/snow2school-en.html

* **Transform4School:** Transformation by participation: Model schools for learning of democracy and peace
[PROJECT MANAGEMENT](#)
 Hans Karl Peterlini, University of Klagenfurt
[PROJECT DURATION](#)
 1/9/2022 – 31/8/2025
www.sparklingscience.at/transform4school-en.html

Teaching and learning

* **Circus of Knowledge:** Citizen Science meets Citizen Art
[PROJECT MANAGEMENT](#)
 Airan Berg, Johannes Kepler University Linz
[PROJECT DURATION](#)
 1/9/2022 – 31/8/2025
www.sparklingscience.at/circus-of-knowledge-en.html

FFF-Glacier worlds: Freeze For Future – young people create virtual glacier worlds for the future of climate change education
[PROJECT MANAGEMENT](#)
 Lars Keller, University of Innsbruck
[PROJECT DURATION](#)
 1/11/2022 – 31/10/2025
<https://sparklingscience.at/fff-glacier-worlds-en.html>

* **“One day there will be ...”:** Circular Materials Narratives for Futures in the Anthropocene
[PROJECT MANAGEMENT](#)
 Robert Kamper, University College of Teacher Education Lower Austria
[PROJECT DURATION](#)
 1/9/2022 – 31/8/2024
www.sparklingscience.at/one-day-there-will-be-en.html

Technology

* **DIGIdat:** Digital data analysis of indoor air quality meets education for sustainable development
[PROJECT MANAGEMENT](#)
 Gabriel Rojas, University of Innsbruck
[PROJECT DURATION](#)
 1/9/2022 – 31/8/2025
www.sparklingscience.at/digidat-en.html

* **Recycling Heroes:** Application of Citizen Science in schools, to boost the circular economy in the electronics industry
[PROJECT MANAGEMENT](#)
 Munir Merdan, bee produced GmbH, Vienna
[PROJECT DURATION](#)
 1/9/2022 – 31/8/2024
www.sparklingscience.at/recycling-heroes-en.html

* **Smart Sport Assistance:** SSA – Smart Sport Assistance for visually impaired children
[PROJECT MANAGEMENT](#)
 Arnold Baca, University of Vienna
[PROJECT DURATION](#)
 1/9/2022 – 31/8/2025
<https://sparklingscience.at/smart-sport-assistance-en.html>

Projects with an asterisk (*) in the title also involve other Citizen Scientists in the research process in addition to schoolchildren.




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