



**Update: Science Gateway Education**

# Science Gateway Education Activities 2023

## Science Shows

- 5 different shows
- 36 shows at the Globe (Jan-Sept) with 1800+ visitors
- 40 shows at Science Gateway (Oct-Dec) with 2500+ visitors

## Lab Workshops

- 10 different lab workshops
- 281 workshops with 5200+ participants

## CERN-Solvay programme

- 12 new education videos with 2.2 million views online
- 1000 certificates for online course
- 600+ applications from 60+ countries for camp (30 selected)



# Science Shows: objectives for 2024

Fine-tuning existing shows

Schedule more shows (approx. 200)

Find more guides

New developments (15-minute show for events, Outdoor show, Pop-up show )

Science show evaluation protocol

Recruit new Science Show  
coordinator/facilitator  
(successor for  
Anja KRANJC HORVAT)



# Science shows: on the road

- **Edinburgh Science Festival, April 2024**
- **Sciencetival, Ljubljana, June 2024**
- **Copernicus Science Picnic, Warsaw, June 2024**
- **La nuit de la science, Geneva, July 2024 (TBD)**
- **Belgrade Science Festival, December 2024 (TBD)**



# Particle Detectives:

## A low-cost portable science show

by Michael Gregory & Anja Kranjc Horvat

- **Inspired by Science Shows at Science Gateway**
- **variety of experiments to demonstrate the existence of particles and their interactions, some light explanations of how these all tie together in large particle detectors at CERN**
- **modular show of approx. 40 min, can be adapted to level of the audience, available materials, and other local constraints**

<https://zenodo.org/records/10611185>



# Lab workshops: Oct to Dec 2023

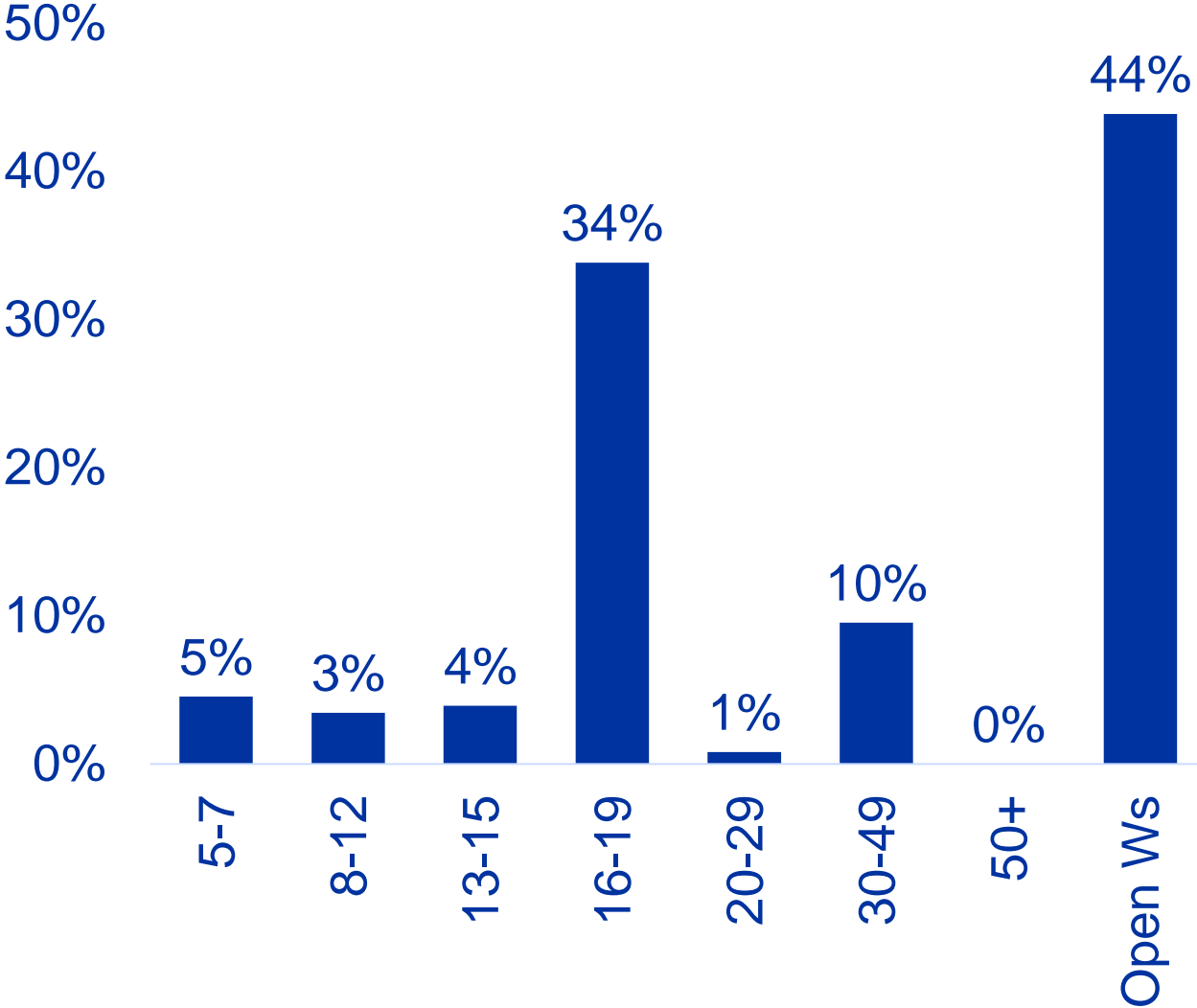
281 workshop

5250 participants

Exceptionally high Net Promoter Score  
for open workshops  
(„Seeing the invisible“) >80%



### Age distribution of workshop participants 2023





# Lab workshops: objectives for 2024

Offer more workshops (> 20k participants)

Offer different workshops for individual visitors & families (Open Workshops)

Develop new workshops (Ultrasound, Vacuum, Photons)

More evaluation

Recruit new Science Educator  
(successor for Patrick THILL)



# Lab workshops: sharing ideas

- Providing design files and educational support material for workshops that are easy to replicate
- To be updated continuously
- If you have specific questions: please don't hesitate to contact us



## Scattering boxes - Seeing the invisible

Explore how balls interact with a hidden structure to develop a scientific model.

Author: CERN PER team

Age group: 5-12 13-15 16+



## Balloon Hovercraft - Power of Air

Explore how air is able to help us lift heavy things by reducing friction.

Author: CERN PER team

Age group: 5-12 13-15



# CERN-Solvay Programme: deliverables overview

Season 1 (9/22-3/23)	
Short videos	3
Course videos	4
Camps	0



Season 2 (8/23-10/23)	
Short videos	5
Course videos	1
Camps	1



Season 3 (4/24-10/24)	
Short videos	3
Course videos	4
<b>Camps</b>	<b>2</b>

- Multipolar magnets
- CMS hoverpads
- ATLAS fiber optics

- Luminescence
- Electromagnetism
- Currents & magnets
- Permanent magnets

- Thermal contraction
- Magnetic yoke
- Resonant RF cavities
- Antimatter spectroscopy
- Detecting the invisible

- Group theory

- Dipoles and quadrupoles
- Particle acceleration
- CLOUD in a bottle

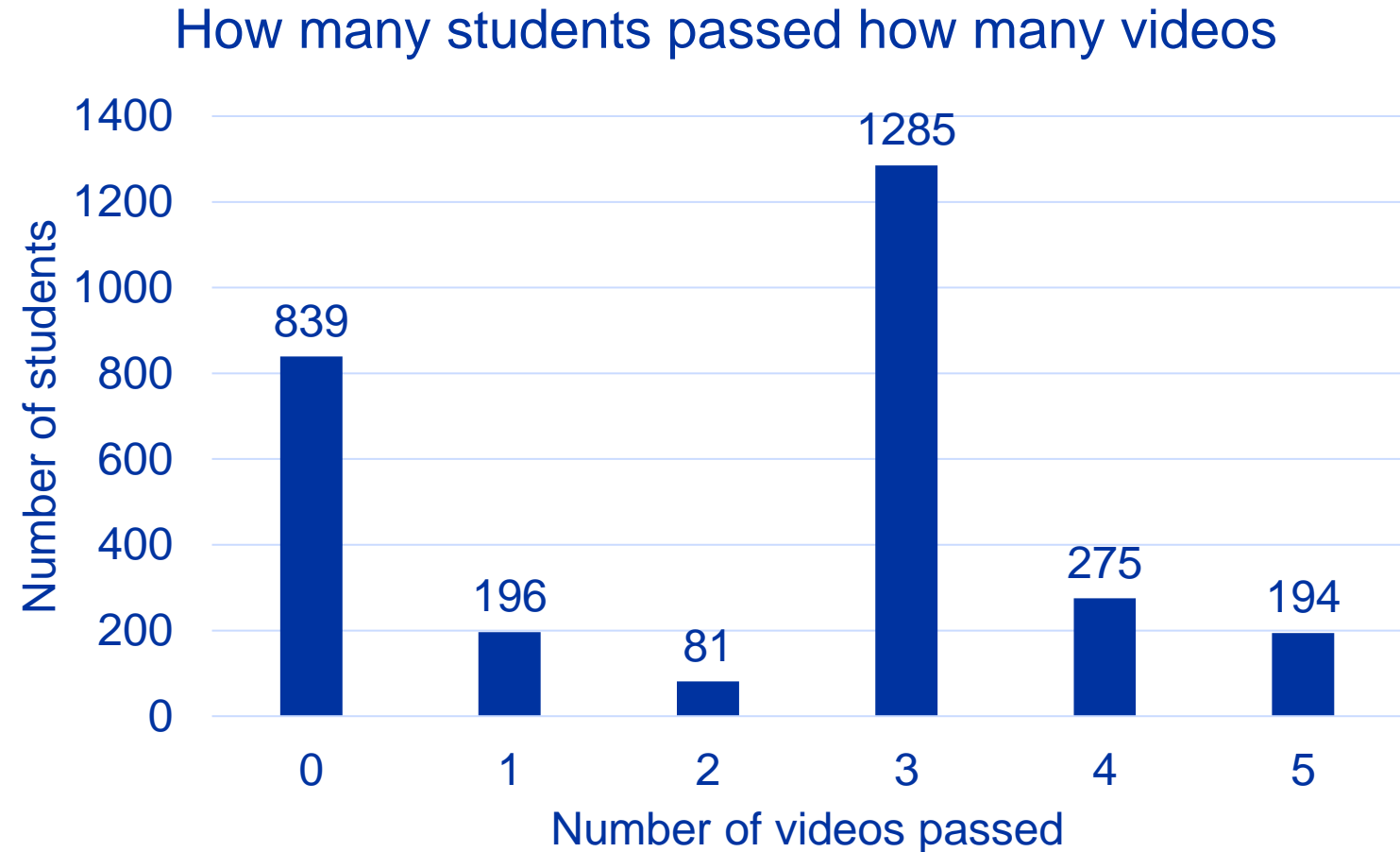
- Temperature and heat
- Phase transitions
- Superfluids
- Superconductors

Extension beyond 2024?

# CERN-Solvay online course

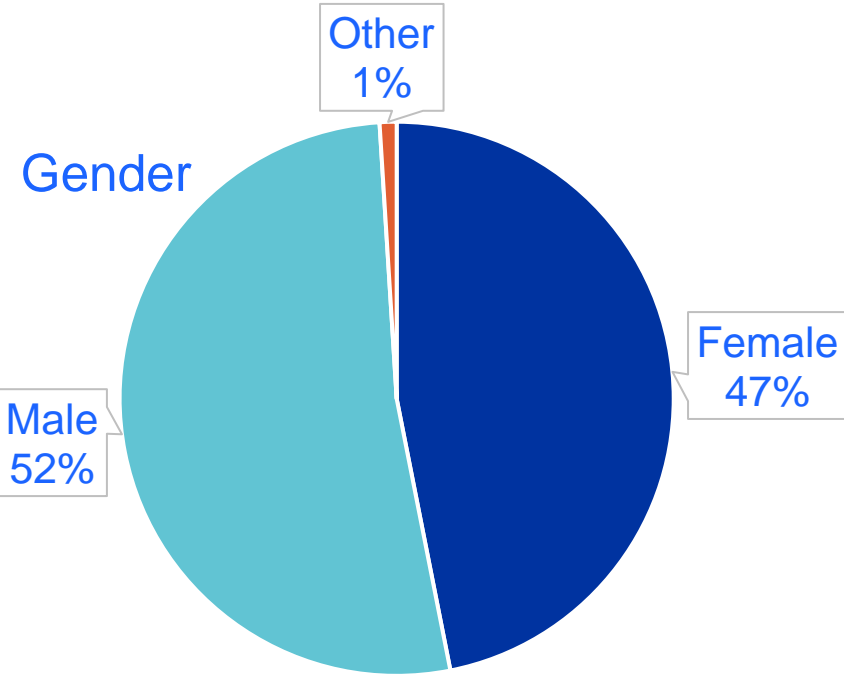
(18 January 2024)

- **2876 non-CERN users**
- **1754 certificates delivered**
- **61.0 % course completion rate**



# CERN-Solvay camps: applications for camps 2 & 3

- 660 applications completed
- 91 countries



Students	Nationalities
113	Italy
40	Türkiye
36	Spain, India
35	United Kingdom
30	United States
27	Thailand
24	Romania, Germany
23	Mexico
19	France, Poland
18	Belgium
16	Bulgaria
15	Portugal, Greece
14	Brazil
11	Serbia, Austria
10	Argentina
9	Slovakia, South Korea, Hungary
8	Croatia
6	Colombia, Australia, Czechia, Pakistan, China, Georgia, Ireland
5	Sweden, Switzerland
...	...



# New database for educational resources at CERN

**Educational resources developed at CERN previously scattered on numerous websites (e.g., home.cern, visit.cern, S’Cool LAB, outreach websites of LHC experiments, IPPOG, etc.)**

**Goals: new central entry point for all CERN educational resources, in a user-friendly way**

- **Possibility to filter by activity type, age group, audience, title, CERN/curriculum topic**
- **Target audiences: Curious individuals, interested students, motivated teachers (for classroom activities or as preparation for a CERN visit), national contacts for CERN70 local events, other science centres, ...**
- **Can be accessed through [visit.cern/resources](https://visit.cern/resources)**

# Thanks for your attention!

Let's discuss