



CERN Teacher Programmes

Inspiring the next generation of scientists

Mick Storr

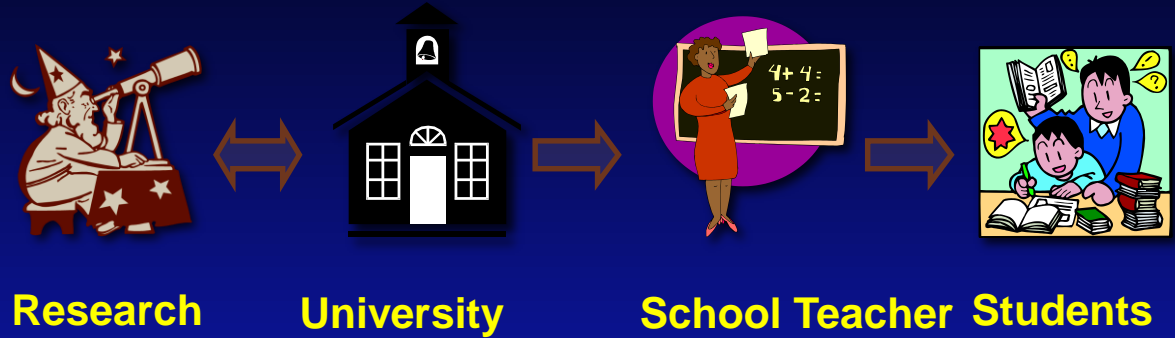
CERN, JINR Dubna, and
University of Birmingham



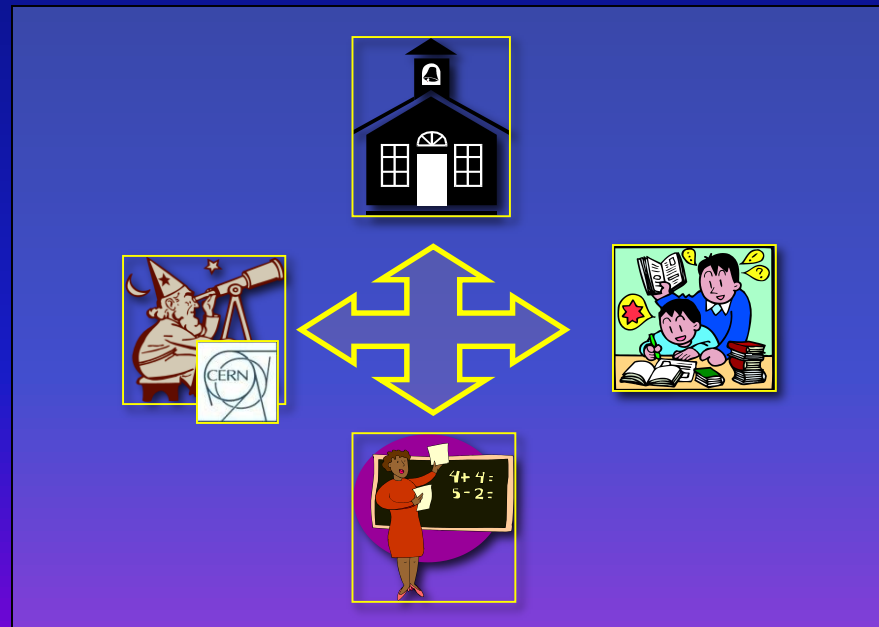
Objective of Teacher Programmes

To bring modern research closer to schools

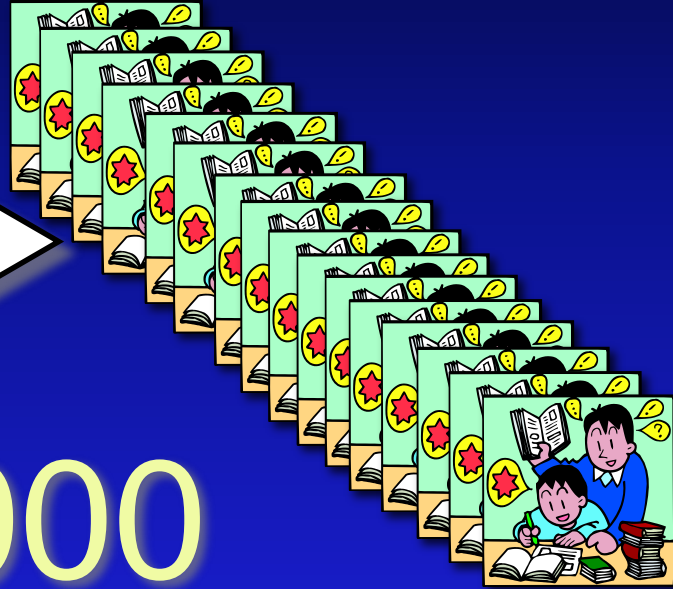
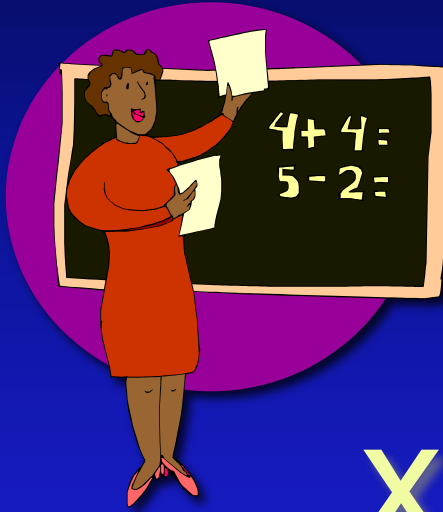
OLD



NEW



Looking for multiplicative factors



X 1000

School Teacher

School Students



Objectives of CERN Teacher Programmes

- Pass the message
 - Teachers are our partners and colleagues
- Recognise
 - Teachers hold the future in their hands
- Empower teachers
 - To update, expand and pass on their knowledge
- Facilitate
 - Learning
 - Networking
- Inspire and encourage
- Open and honest
- NOT TO tell teachers how to teach
- Learn from teachers

THANK



What are we trying to achieve with the help of physics teachers ?

1: RAISE AND MAINTAIN THE INTEREST OF STUDENTS IN MODERN SCIENCE

Motivate them to continue scientific education at school
Help them to better understand the physical world

Improve scientific literacy

2: INSTIL A FEELING OF MYSTERY AND DISCOVERY POTENTIAL

Motivate students to study science/engineering at universities

Prepare the future generation of scientists/engineers

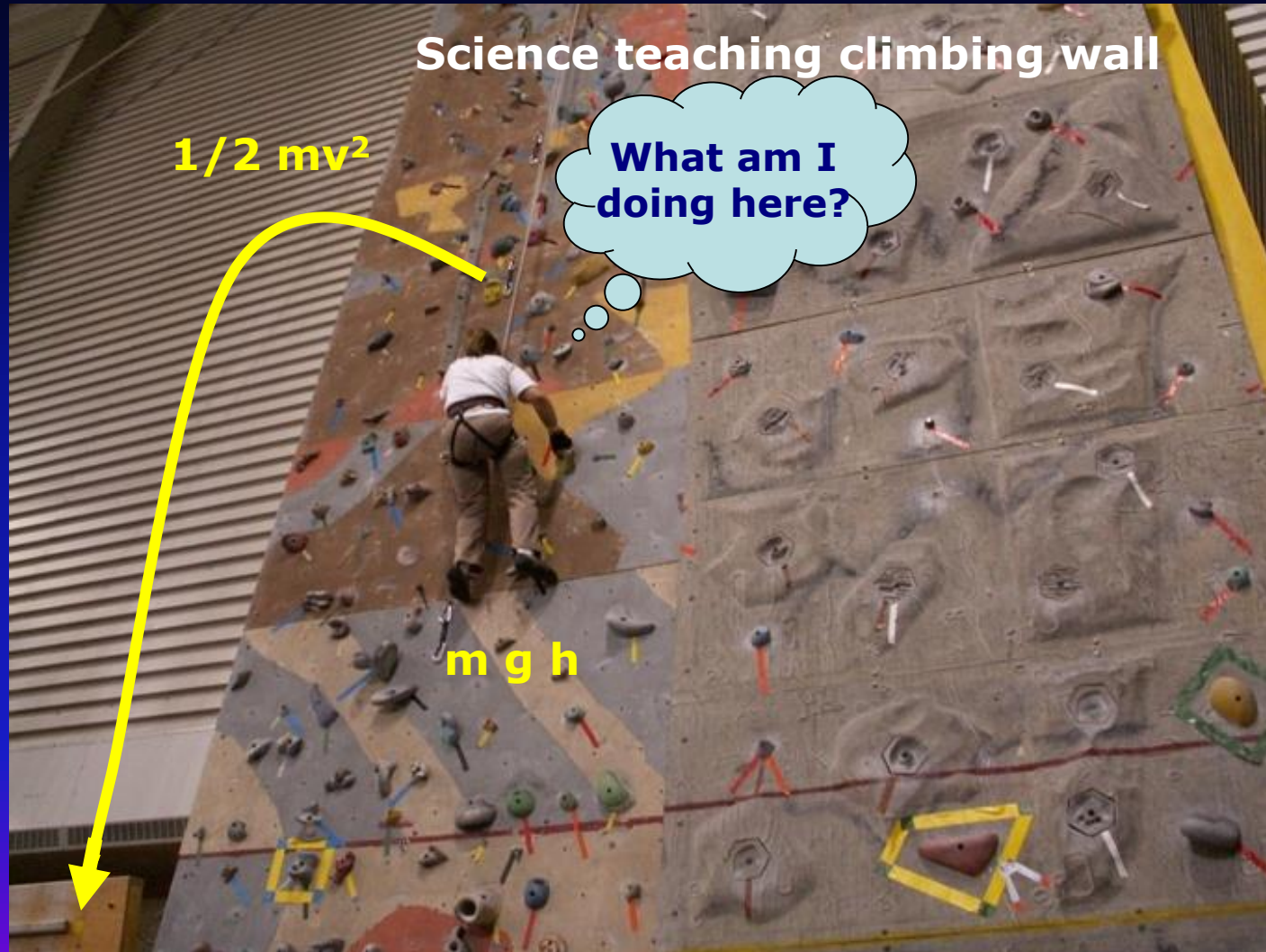
SCIENCE IS ALIVE !



How researchers view science

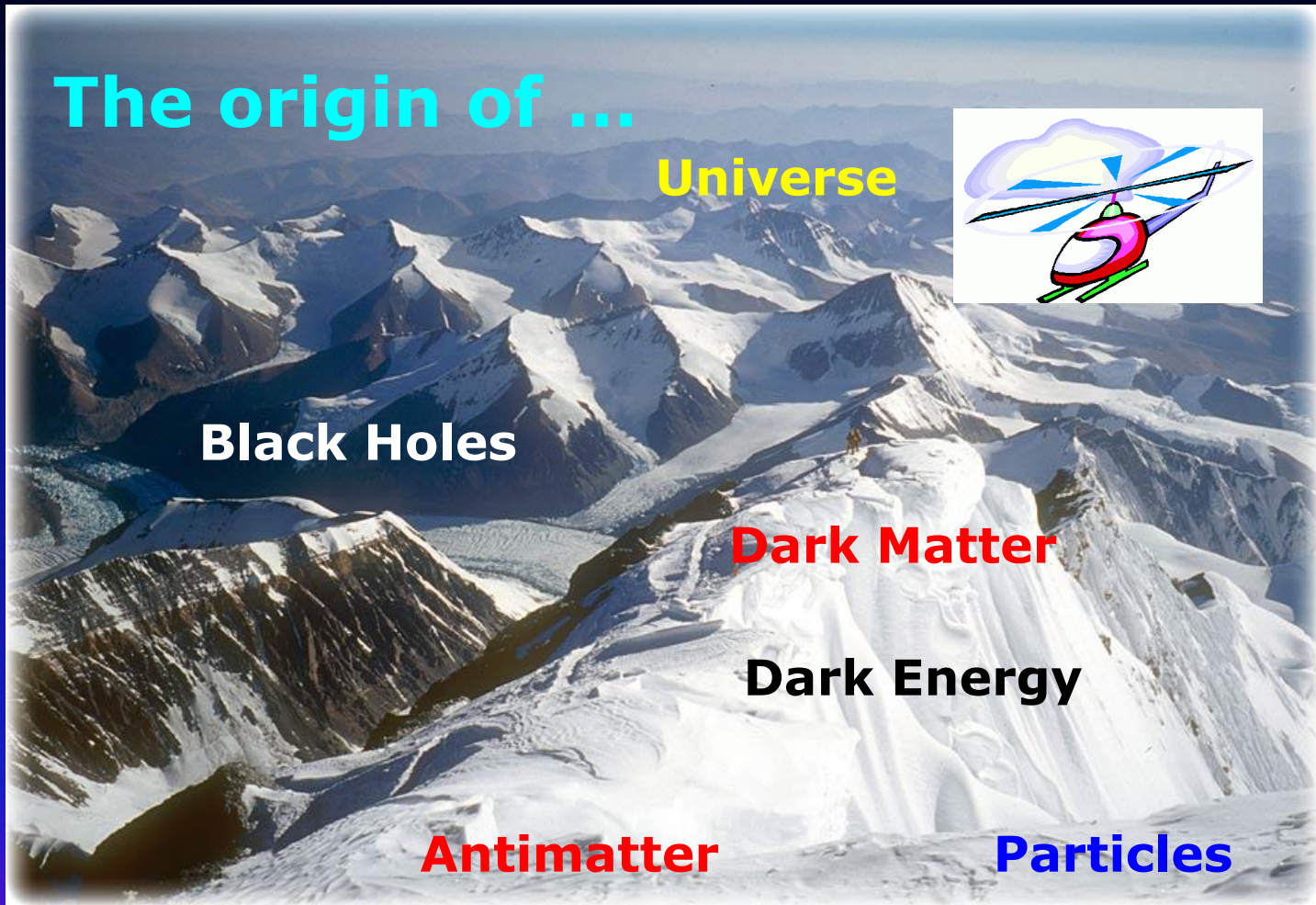


How school students view science





Take students on a sight-seeing tour ...



Link modern physics to school curriculum



Residential Teacher Programmes

Basic content

- Lectures
 - Introductions to CERN, Particle Physics, Cosmology, the LHC Experiments, Particle Accelerators, Medical Applications of Particle Physics, and the GRID
- Visits to experimental facilities
- Hands-on activities
- Working group activities
- Opportunities to meet working research physicists in a variety of informal settings.

All lectures are web archived and made publicly available

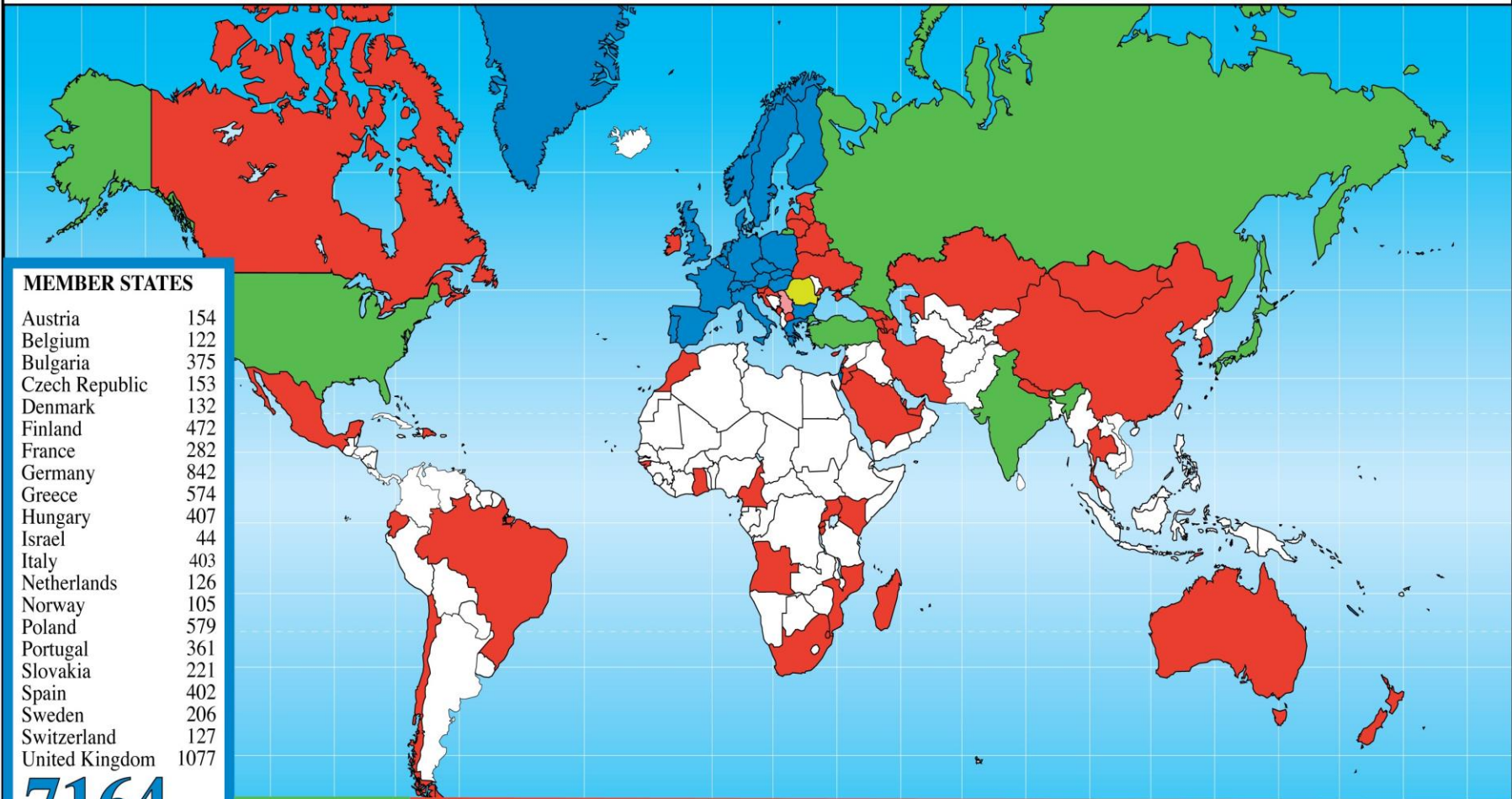


Outcome

- Newly inspired, motivated and confident teachers
- Inspire and motivate students
- Communicate with their colleagues
- Communicate with the general public
- Act as ambassadors for science/engineering, physics, particle physics, CERN
- Organise follow up activities
 - Visits, exhibitions, video conferences, projects
- Promote teacher programmes
- Help us to expand beyond the borders of CERN

**Excellent examples among
the many teachers who
have attended our
programmes**

Teacher Programme Participants 1998 - 2014 (Total: 8430)



MEMBER STATES

Austria	154
Belgium	122
Bulgaria	375
Czech Republic	153
Denmark	132
Finland	472
France	282
Germany	842
Greece	574
Hungary	407
Israel	44
Italy	403
Netherlands	126
Norway	105
Poland	579
Portugal	361
Slovakia	221
Spain	402
Sweden	206
Switzerland	127
United Kingdom	1077

7164

CANDIDATE FOR ACCESSION

Romania	13
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ASSOCIATE MEMBER IN THE PRE-STAGE TO MEMBERSHIP

Serbia	47
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OBSERVER STATES

India	3
Japan	6
Russia	279
Turkey	74
USA	92

454

OTHERS

Chile	3	Ireland	7	Montenegro	13	Slovenia	21		
Angola	7	China	2	Jordan	11	Morocco	2	South Africa	6
Armenia	1	Croatia	2	Kazakhstan	5	Mozambique	19	South Korea	48
Australia	6	Cyprus	8	Kenya	4	Nepal	1	Swaziland	1
Azerbaijan	1	Dominican Rep.	24	Latvia	1	New Zealand	1	Thailand	10
Belarus	2	Ecuador	2	Lebanon	1	Palestine (O.T.)	1	T.F.Y.R.O.M.	11
Brazil	144	Estonia	54	Lithuania	16	Qatar	1	Timor-Leste	7
Burundi	2	Georgia	88	Madagascar	2	Rwanda	20	Uganda	3
Cameroon	4	Ghana	6	Malta	36	Sao Tome	5	Ukraine	113
Canada	7	Guinea Bissau	1	Mexico	10	Saudi Arabia	1	U.A.E.	1
Cape Verde	4	Iran	3	Mongolia	1	Singapore	2		

752



Arthur C. Clarke

Author of 2001 : A Space Odyssey

- “When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong.” •
- “The only way of discovering the limits of the possible is to venture a little way past them into the impossible.”
- “Any sufficiently advanced technology is indistinguishable from magic.”

Our goal, with the help of teachers, is to bring a little of the magic of CERN into the classroom