



# CERN Teacher Programmes

Inspiring the next generation of scientists

Mick Storr

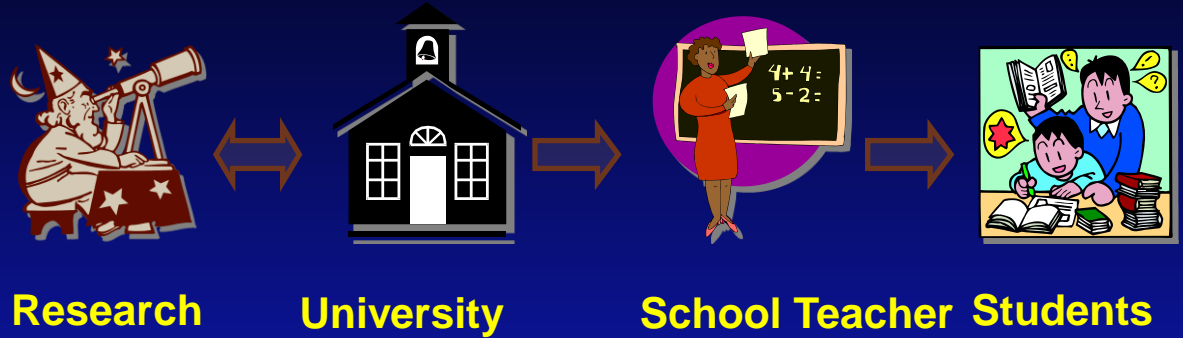
CERN and  
University of Birmingham



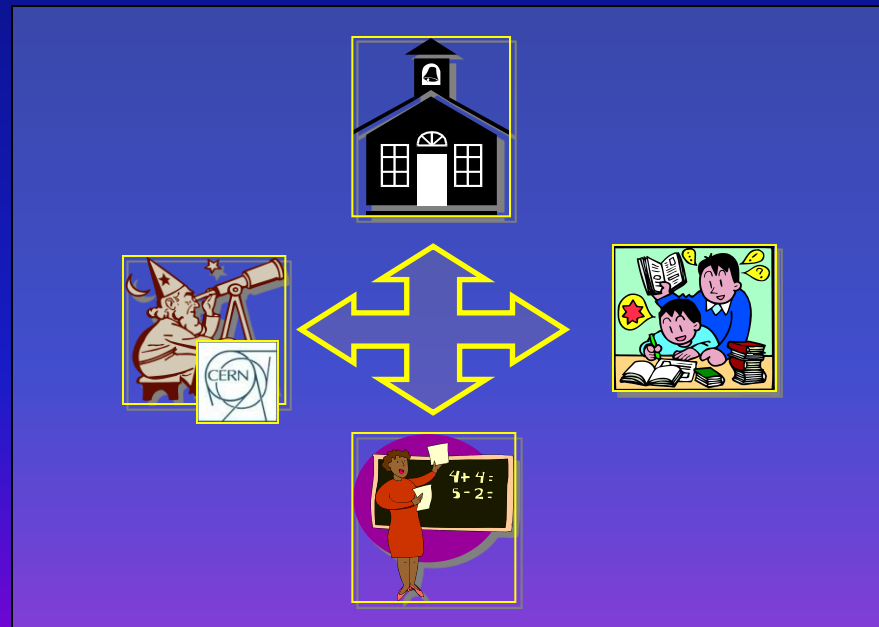
# Objective of Teacher Programmes

## To bring modern research closer to schools

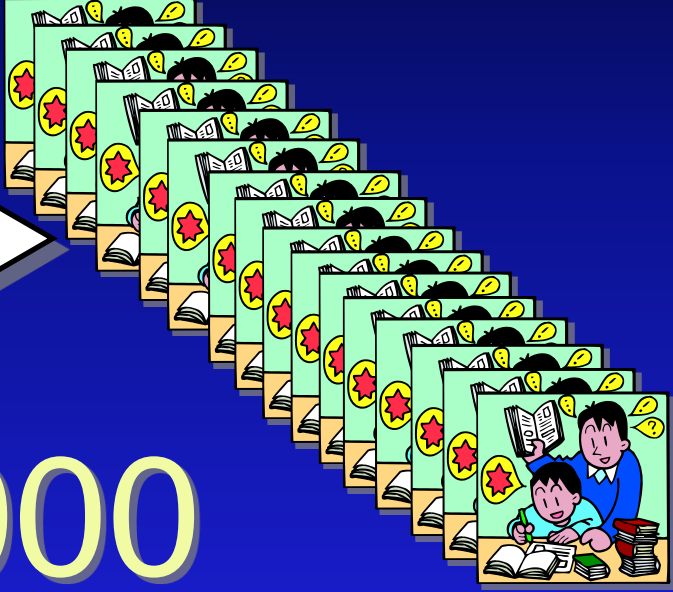
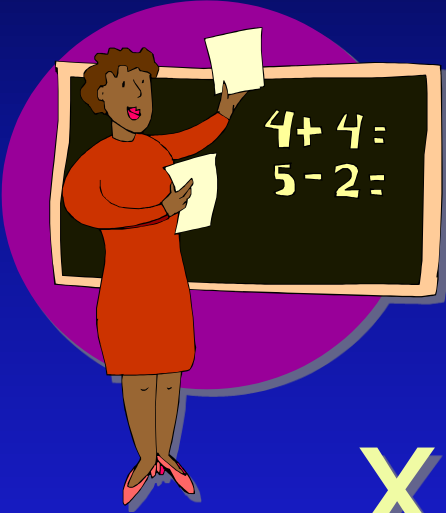
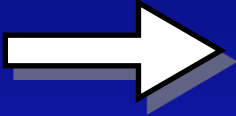
OLD



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 !**

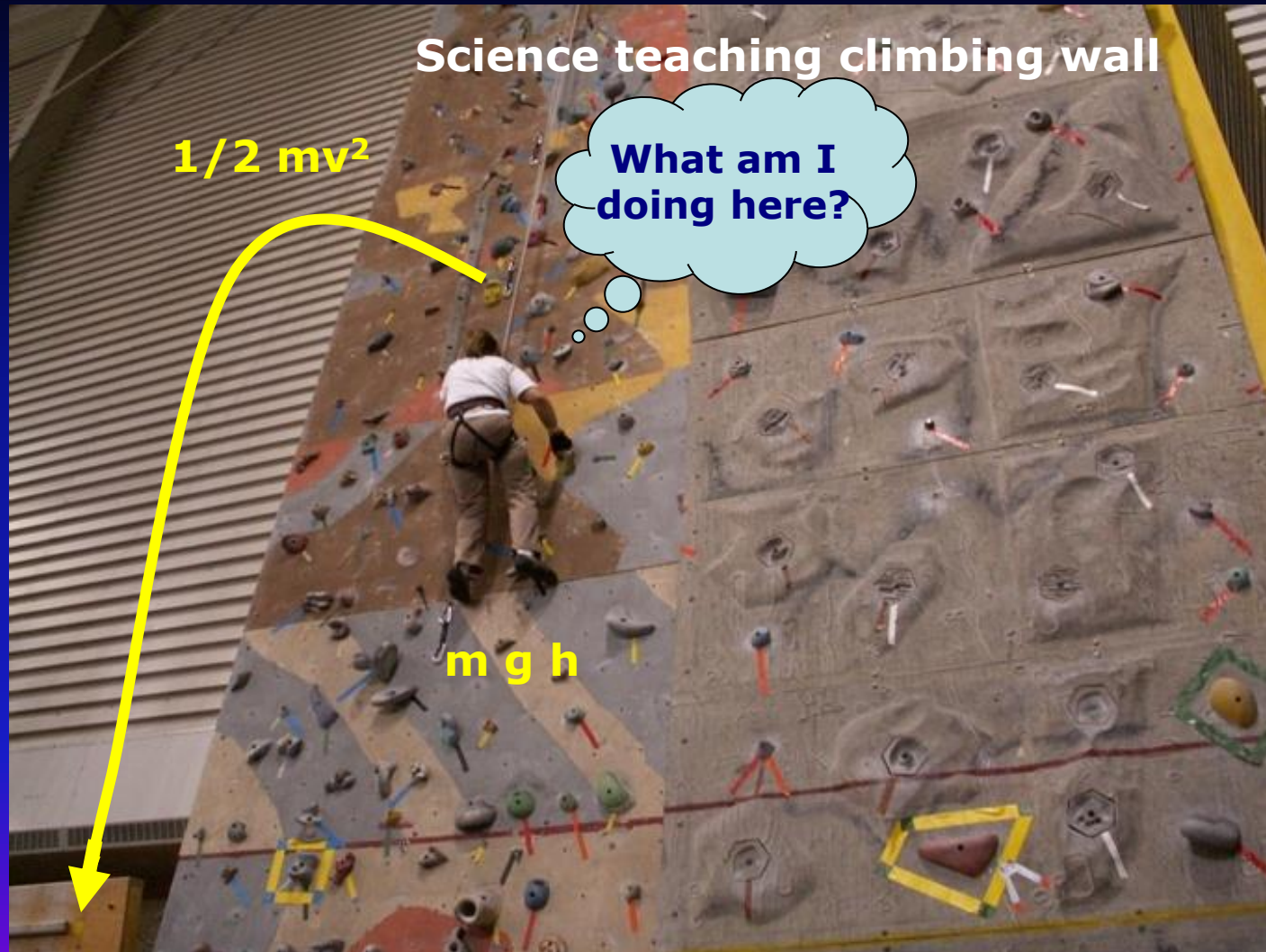


# How researchers view science



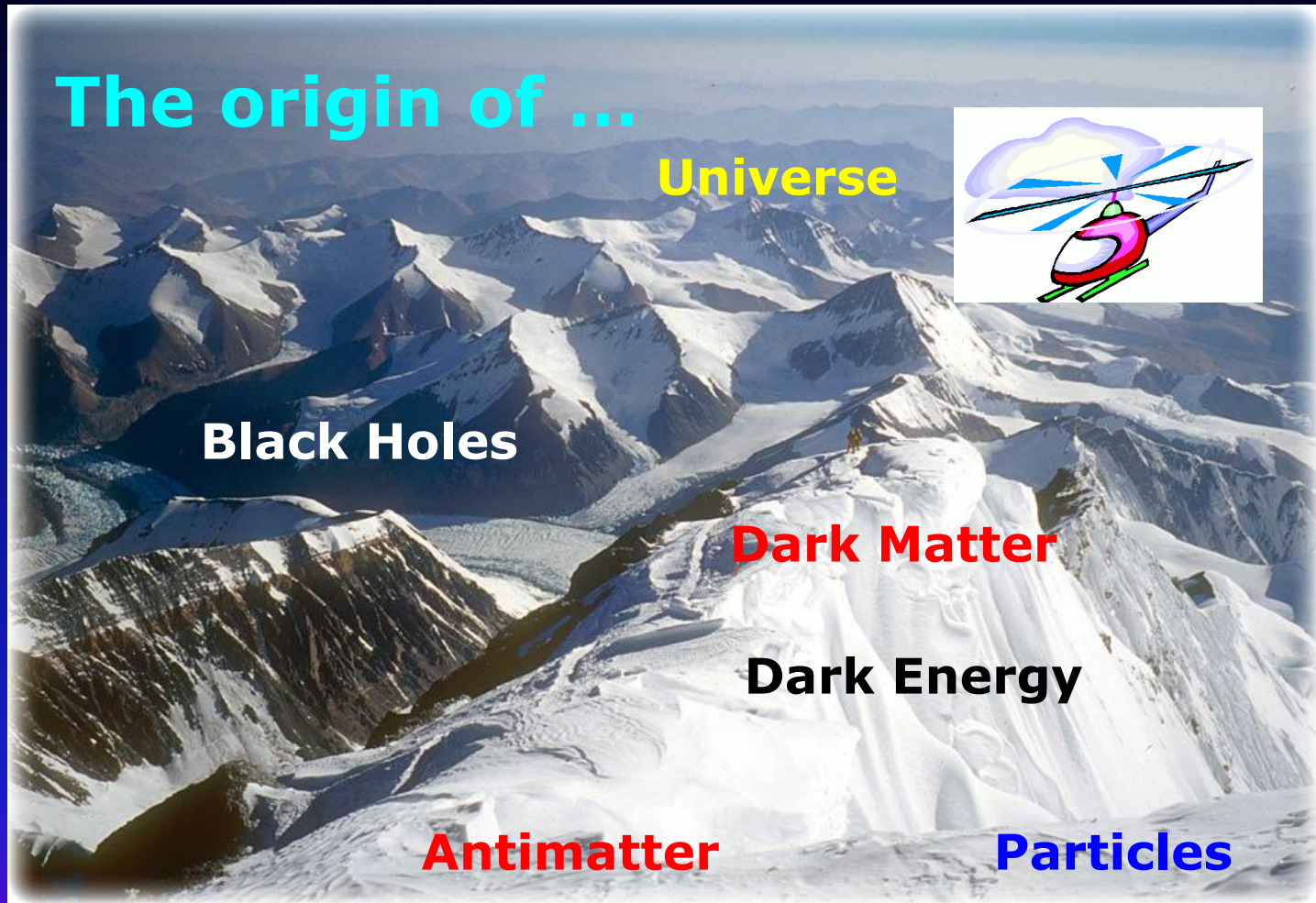


# How school students view science





# 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

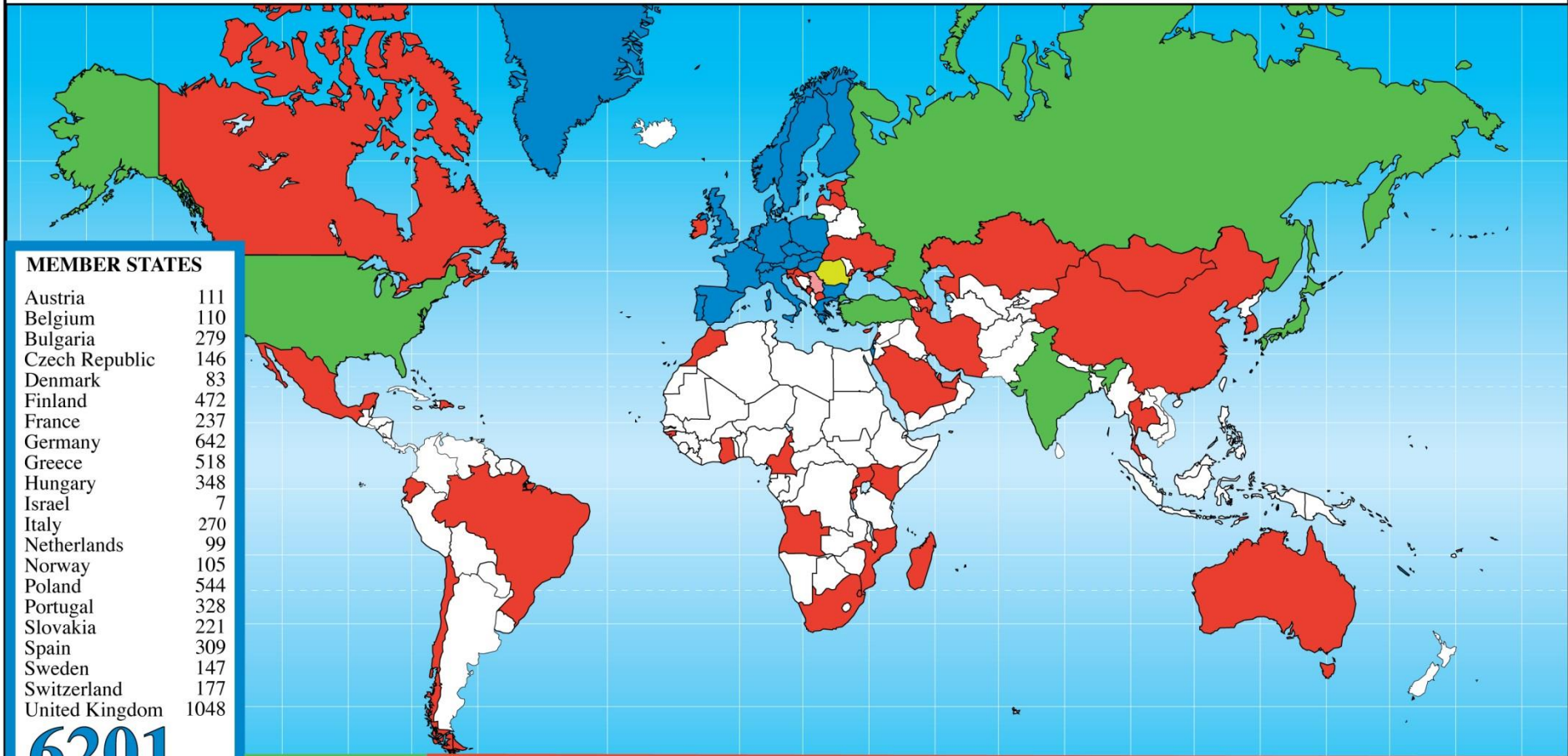


# Outcome

- 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 - 2013 (Total: 7087)



## MEMBER STATES

Austria	111
Belgium	110
Bulgaria	279
Czech Republic	146
Denmark	83
Finland	472
France	237
Germany	642
Greece	518
Hungary	348
Israel	7
Italy	270
Netherlands	99
Norway	105
Poland	544
Portugal	328
Slovakia	221
Spain	309
Sweden	147
Switzerland	177
United Kingdom	1048

**6201**

## CANDIDATE FOR ACCESSION

Romania	12
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## ASSOCIATE MEMBER IN THE PRE-STAGE TO MEMBERSHIP

Serbia	14
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## OBSERVER STATES

India	2
Japan	5
Russia	193
Turkey	3
USA	65

**268**

## OTHERS

Angola	4
Australia	5
Azerbaijan	1
Brazil	114
Burundi	1
Cameroon	3
Canada	3
Cape Verde	3
Chile	3

China	1
Croatia	1
Cyprus	8
Dominican Rep.	21
Ecuador	2
Estonia	46
Georgia	74
Ghana	6
Guinea Bissau	1
Iran	1

Ireland	5
Kazakhstan	3
Kenya	4
Latvia	1
Lebanon	1
Madagascar	2
Malta	36
Mexico	6
Mongolia	1
Montenegro	13

Morocco	2
Mozambique	17
Qatar	1
Rwanda	17
Sao Tome	4
Saudi Arabia	1
Singapore	2
Slovenia	21
South Africa	6
South Korea	44

Swaziland	1
Thailand	7
T.F.Y.R.O.M.	11
Timor-Leste	7
Uganda	3
Ukraine	77
U.A.E.	1

**592**



# 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**