

# THE BENEFITS OF PARTNERSHIP

**NAMES Conference 2018**

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**SCIENCE  
MUSEUM  
GROUP**

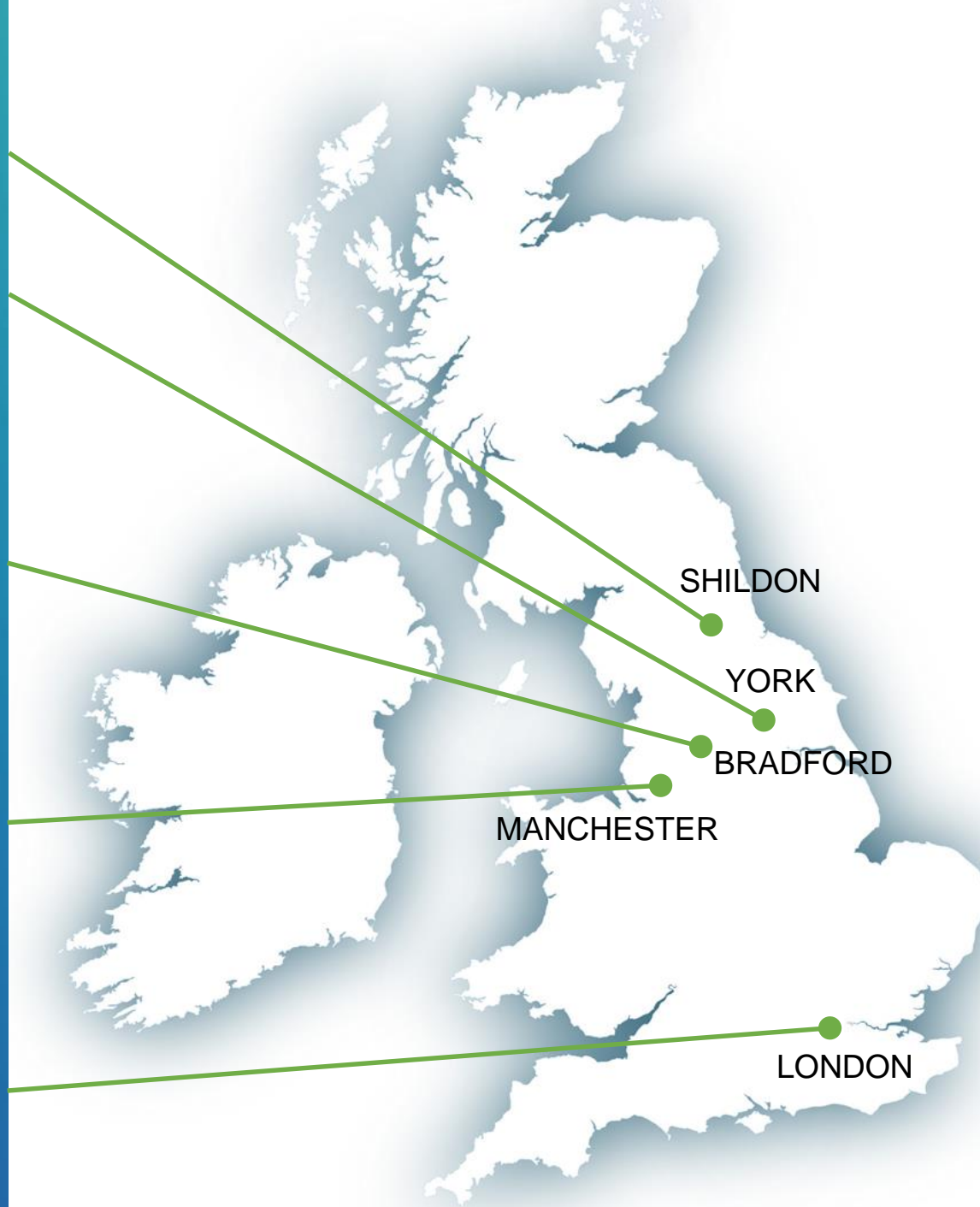
**LOCOMOTION**

**RAILWAY  
MUSEUM**

**SCIENCE+  
MEDIA  
MUSEUM**

**SCIENCE+  
INDUSTRY  
MUSEUM**

**SCIENCE  
MUSEUM**



SHILDON

YORK

BRADFORD

MANCHESTER

LONDON

**SCIENCE  
MUSEUM  
GROUP**



Sharing **Research** to  
ground our  
knowledge



Sharing **Collections**  
to reach our  
audiences



Sharing **Best  
Practice** through  
shared ways of  
working

# FORMALISING WHAT WE KNOW

SHARING RESEARCH

NAMES 2018

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# THE IMAGE OF STEM

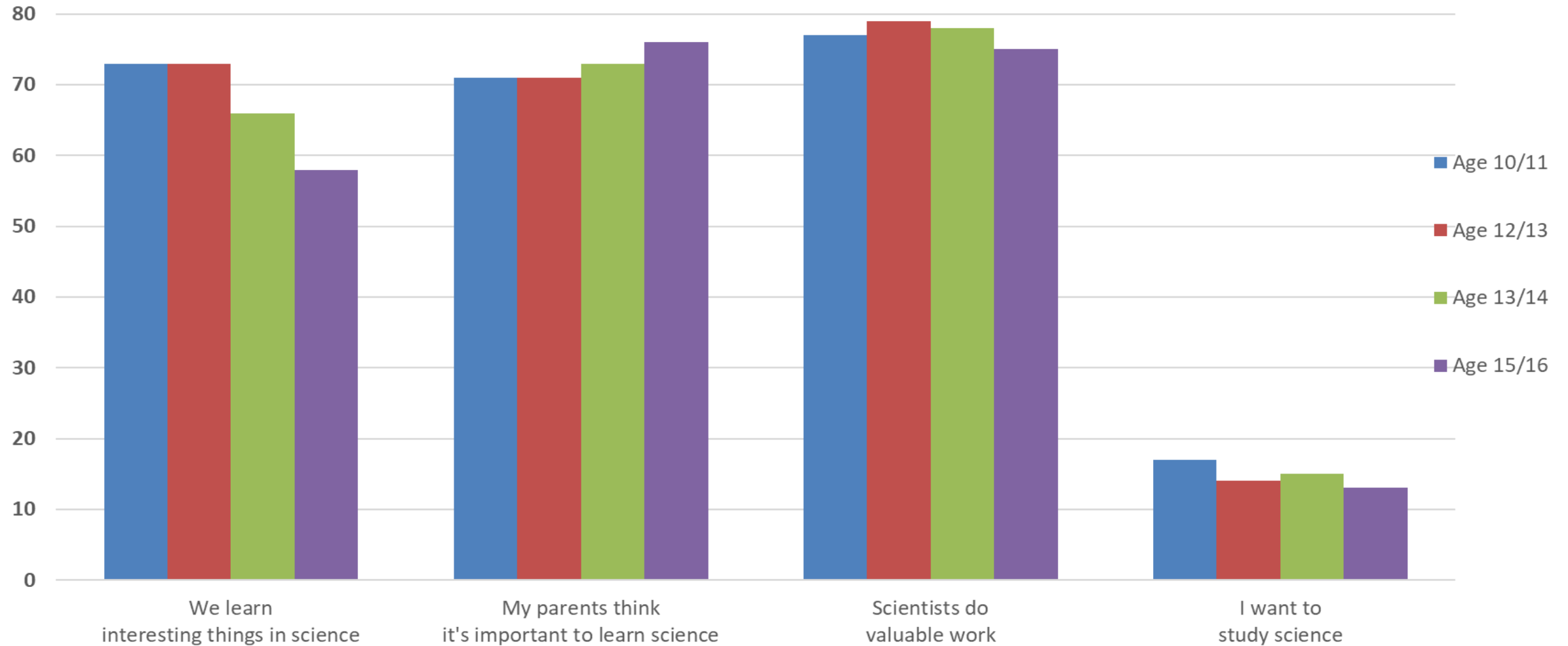
A lot of people enjoy STEM...

But many see it as abstract and theoretical with little real life application and suited only to the very bright.

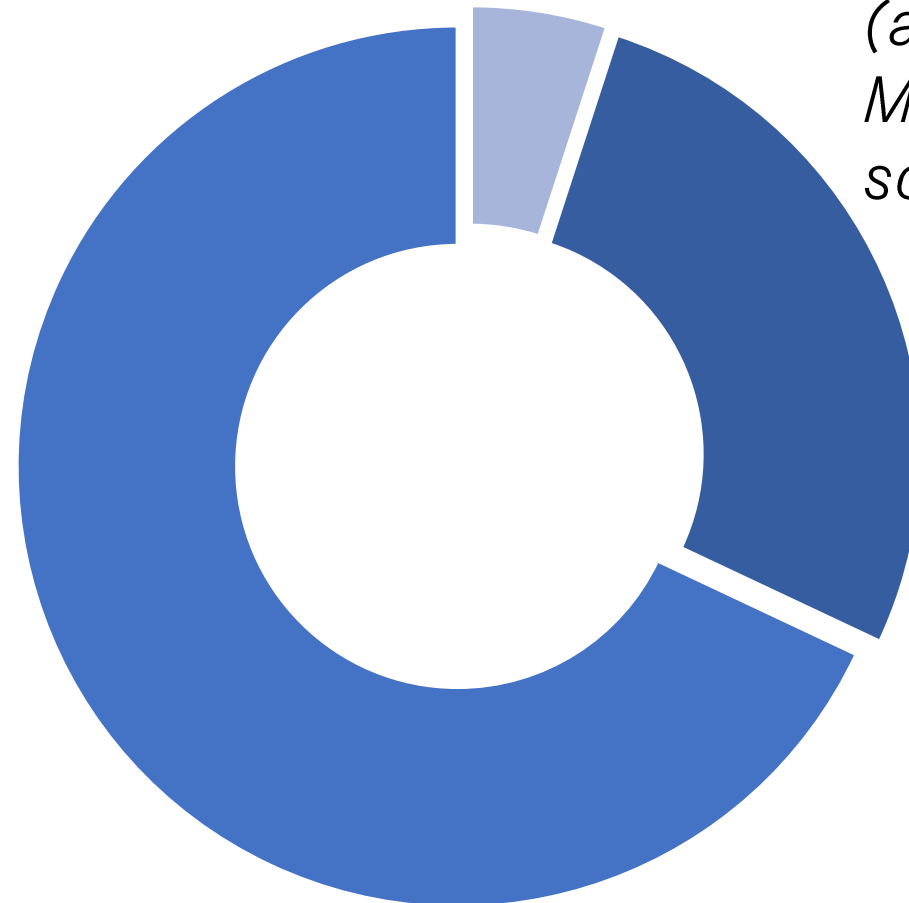
Many see it is something that is just learned in school and don't recognise the value it has to their lives.



# PERCENTAGE OF STUDENTS WHO AGREE WITH THESE STATEMENTS



# SCIENCE CAPITAL IN THE UK (A CONSTRUCT)



**5%** have HIGH science capital  
*(actively engaged)*  
*More likely to be male and socially advantaged*

**68%** have MEDIUM science capital  
*(interested, but...)*

**27%** have LOW science capital  
*(science is not for me)*  
*More likely to be female and socially disadvantaged*

# THE CONCEPT OF SCIENCE CAPITAL... (A TOOL)

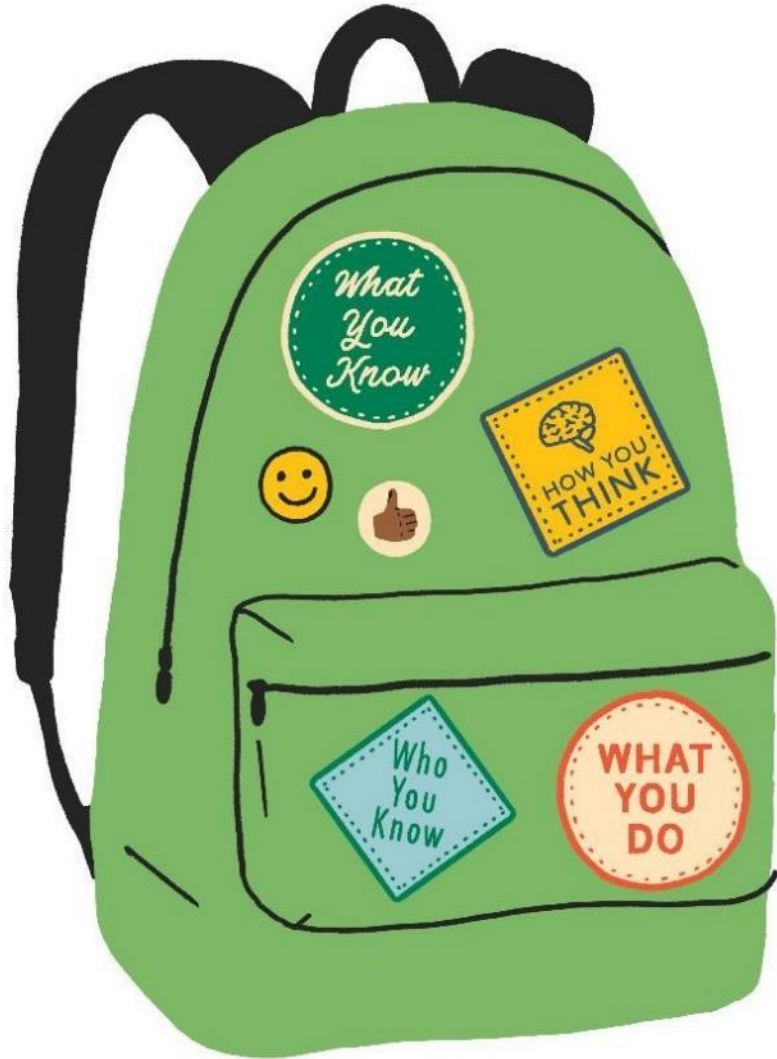
Gives us an insight into why  
and how some people  
participate in and engage with  
STEM related experiences

...and why some do not





# YOUR SCIENCE CAPITAL...



- What you know about science/ STEM
- What you do – different science related activities
- Who you know who use and talk about science
- How you think about science

# A SCIENCE CAPITAL INFORMED APPROACH



**EQUALITY = SAMENESS**  
**GIVING EVERYONE THE SAME**  
**THING**

**Only works if everyone starts**  
**from the same place**

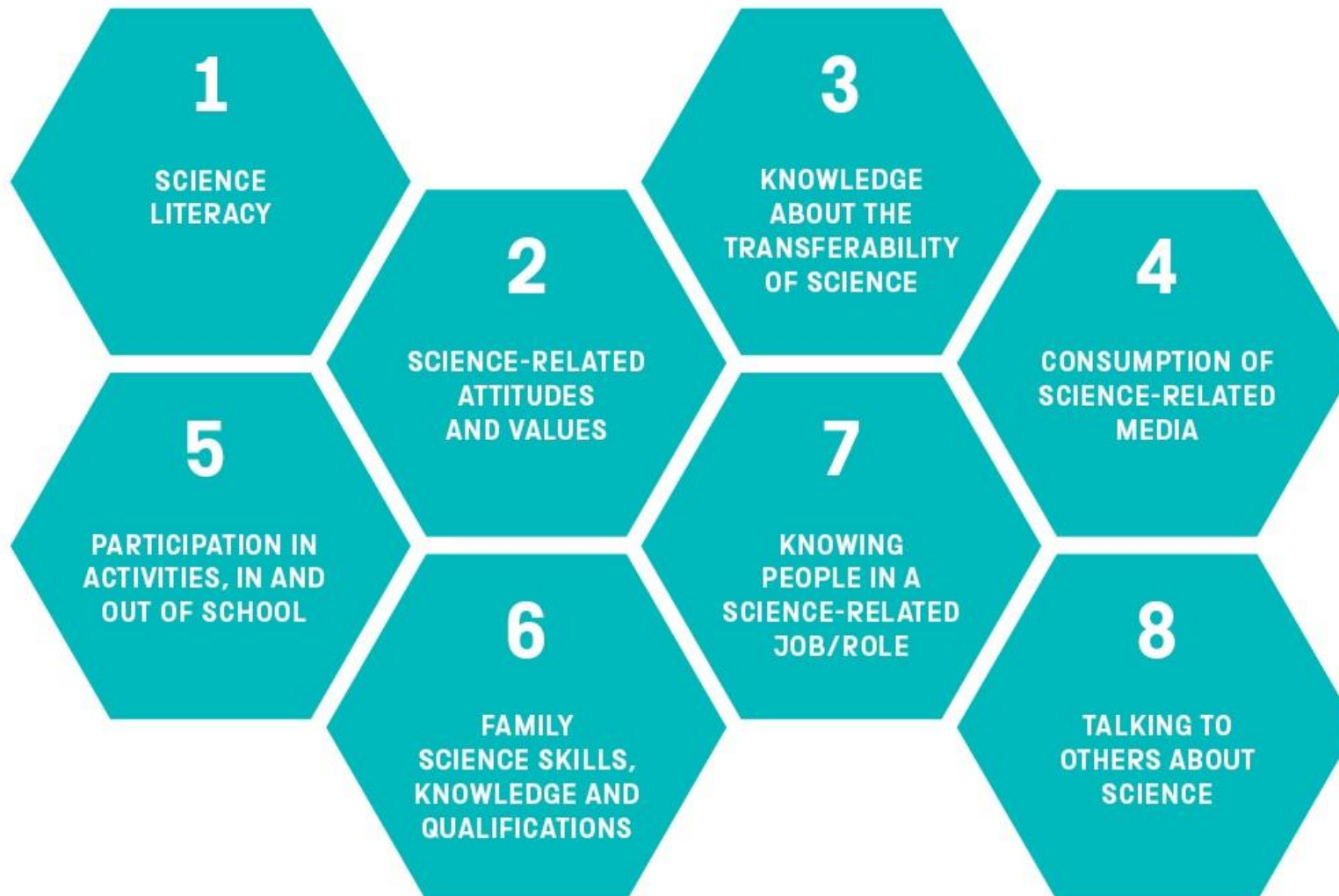


**EQUITY = FAIRNESS**  
**ACCESS TO THE SAME**  
**OPPORTUNITIES**

**Providing what is required to**  
**make things equal.**

**We need to ensure equity**  
**before we achieve equality**

# WHAT INFLUENCES OUR SCIENCE CAPITAL?



# THE LEARNING LANDSCAPE



Home



School



Everyday life



Informal science spaces

We play our part in an ecosystem of STEM learning

We can positively influence and broaden peoples ideas of what science is - within and beyond our experiences

# INFORMAL SCIENCE ENVIRONMENTS

- First hand experience of using **science skills**
- Engage through **active participation** and **social interaction**
- Share **people stories** around STEM from the innovators to the users
- Show the **applications of STEM** and where it is **relevant and connected** to peoples everyday lives
- **Extend experiences** beyond our spaces





# SCIENCE MUSEUM GROUP MISSION

To inspire futures...

Our number 1 core priority...

Grow science capital in individuals and society



INSPIRING FUTURES: STRATEGIC PRIORITIES 2017-2030

## GROW SCIENCE CAPITAL IN INDIVIDUALS AND SOCIETY

Our offer and reputation for lifelong informal STEM learning and engagement will be the best in the world.

**By 2030:**

- We will be recognised as being of strategic importance to the UK STEM agenda and sought out by policy-makers, funders, peers and partners.
- We will reach many more people beyond our walls through outreach and new programmes, including through national and international partnerships, compared with the 2014/15 baseline.
- The Science Museum will remain the number-one UK museum destination for school groups, the number of young people visiting Wonders: The Strain Gallery at the Science Museum free of charge on a school trip will be sustained at a minimum of 200,000 per year from 2019.
- Our online learning resources will be highly regarded for quality and widely used throughout the UK and around the world.
- Our museums will be key destinations for adult audiences.

**Igniting curiosity in science**  
The Science Museum Group plays a central and irreplaceable role in deepening and expanding science literacy in the UK. The breadth of resources in the Group, the diversity of the audiences and communities we serve, and the expertise embedded in our teams, collections and exhibitions are world-class resources for public engagement in STEM. Our organising principle is to build science capital to enrich people's lives and enhance their contributions to society. Science capital is a recent concept that encompasses the myriad factors that influence people's attitudes towards science, including who they know as well as what they know, past experience and exposure, and education.



Noise Orchestra take over as Artists in Residence at the National Science and Media Museum

# SMG VALUES AND APPROACH...

- We inform, inspire and reveal wonder
- We share **authentic stories** from the past, present and future of STEM through our awe inspiring collections
- We are audience centred and use research informed best practice to ensure that we are **open for all**
- We **ignite curiosity** around science, engineering, technology and maths by assisting discovery through active participation and social interaction.



# TOGETHER WE MAKE A DIFFERENCE

Every moment in the museum is an opportunity to shape our visitor's attitudes towards STEM.







## LANGUAGE

Use visual and verbal language that helps everyone to feel that they can do and be part of STEM.



## PROMOTE 'SCIENCE' TALK

Encourage people to talk about the experiences they have had with you and about STEM in their lives.



## EVERYDAY EXAMPLES

Link STEM content to people's rich and diverse interests and experiences.



## CONFIDENCE AND OWNERSHIP

Help everybody to feel welcome and confident to take part in your experiences



## EXTEND THE EXPERIENCE

Provide ways to help people to continue making STEM connections after your experience



## SCIENCE KNOWLEDGE

Value and build on people's existing STEM knowledge and experience.



## SKILLS

Help people to recognise that they have and use a wide range of STEM skills.



## PEOPLE

Broaden the perception of who does and uses STEM in their work and in everyday life.



## POSITIVE REINFORCEMENT

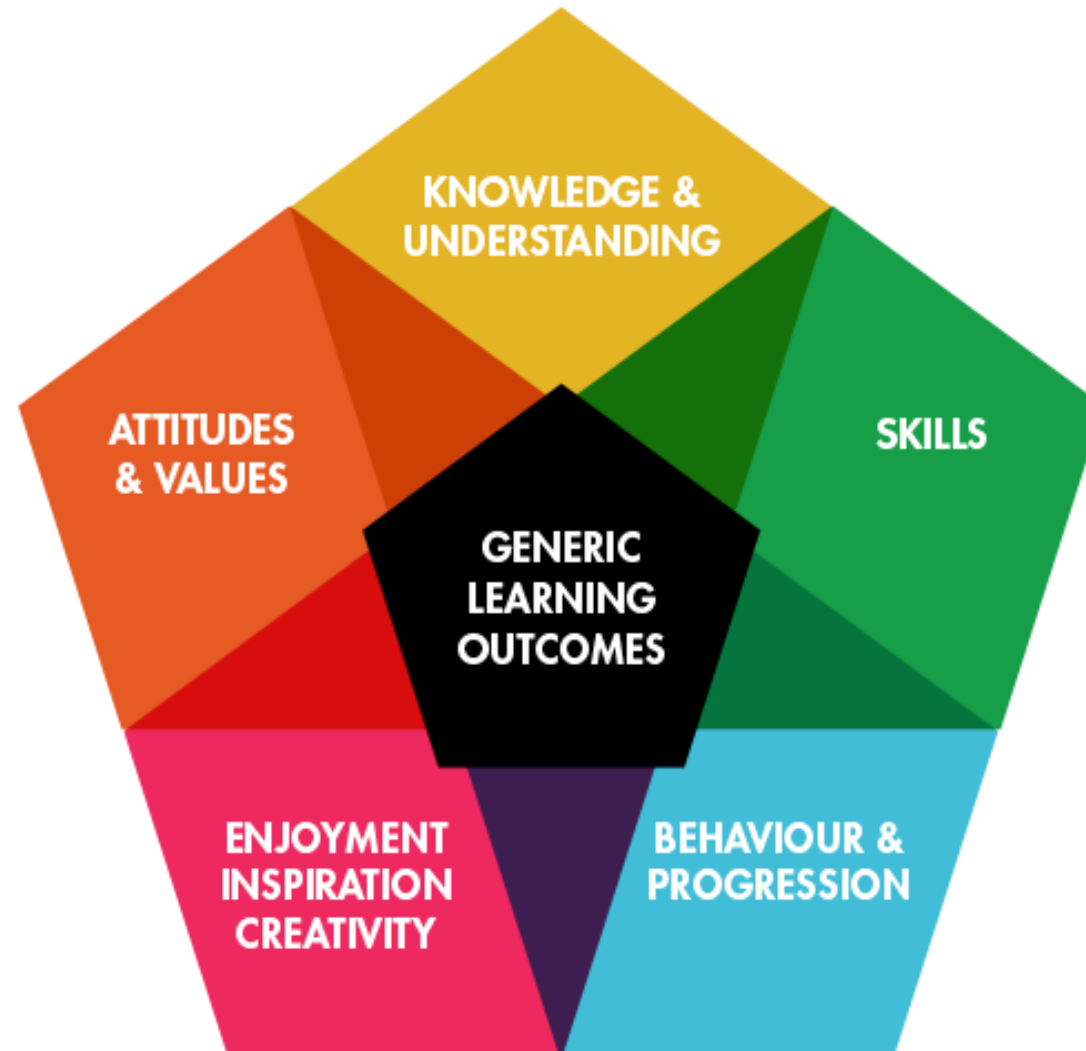
Help people to feel that STEM is something they can do.

# SO WHAT...?

- Improved understanding and recall of science content
- Recognise the personal relevance, value and meaning of science (STEM)
- Deepen people's appreciation of science
- Greater participation in school science lessons (and improved behaviour)
- Increased interest/ pursuit of STEM subjects and careers post 16
- Increased participation in 'out of school' science activities/ lifelong connection with museums and cultural institutions



# INFORMAL LEARNING EXPERIENCES



# THE BENEFITS

If we can help more people to be inspired by and engage with science...

...it will bring more diversity to the people who contribute and participate in science and innovation.

And help build a fairer and more inclusive STEM literate society.

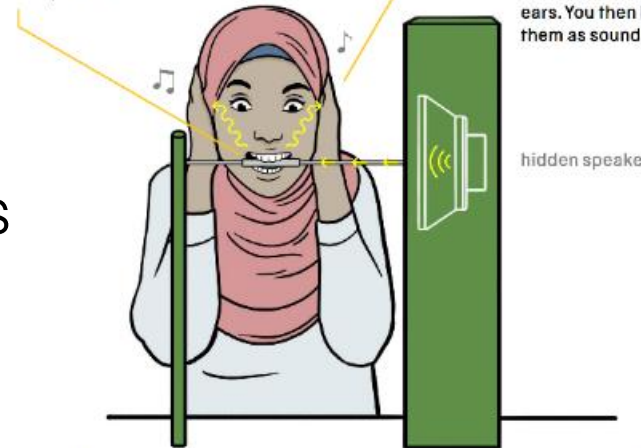


# EXAMPLES INCLUDE...

- Giving all visitors a warm welcome
- Making labels and information understandable for as wide an audience as possible
- Balancing gender and disability representation in marketing
- Widening visitors' perceptions of who does STEM

## Can you hear through your teeth?

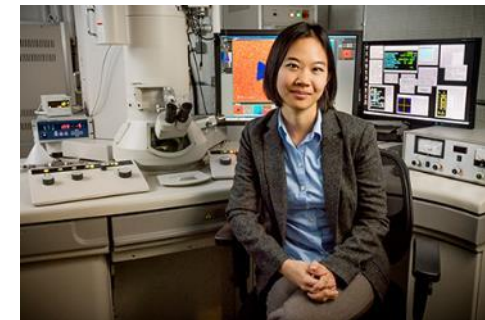
Put a straw on the rod. Gently bite down and cover your ears.



Vibrations travel from the rod through your teeth and bones to your ears. You then hear them as sound.

hidden speaker

Have you noticed that you sound weird in recordings? That's because you hear your own voice through your bones as well as your ears. It sounds deeper to you than it does to everyone else.



Above: Label from *Wonderlab* at the National Science and Media Museum; Marketing materials for *Our Lives in Data* at the Science Museum; Assistant Professor Pinshane Huang as featured in *Wonder Materials: Graphene and Beyond* at the Museum of Science and Industry



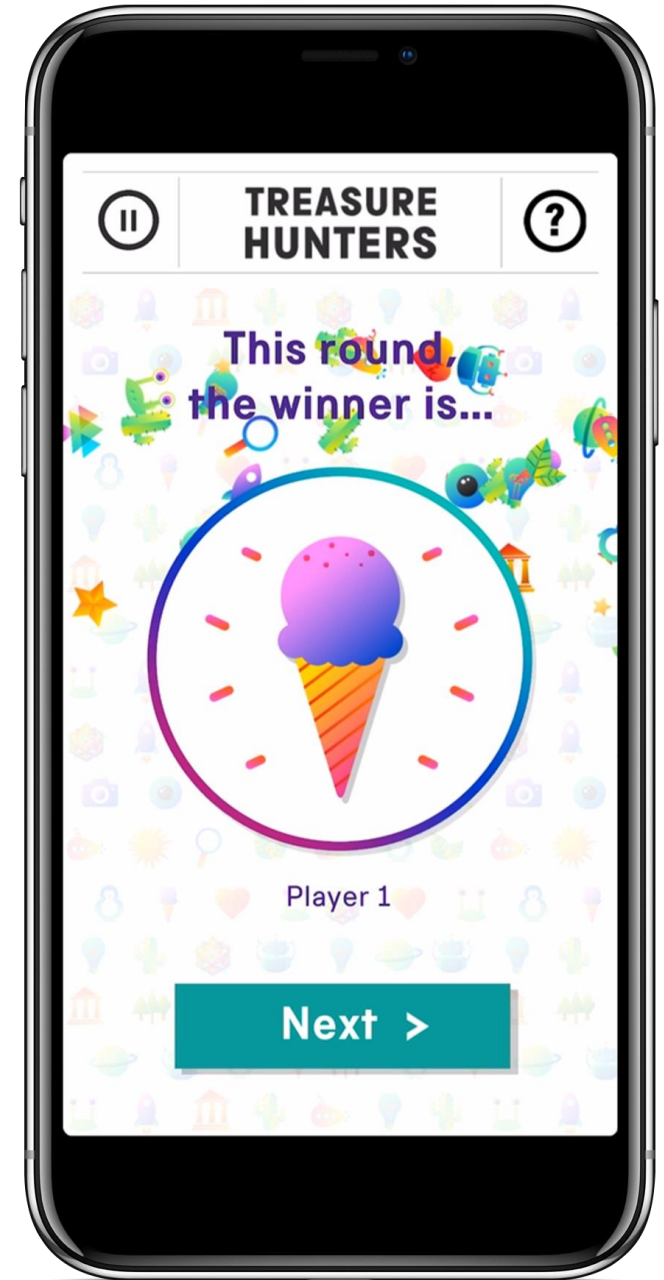
# A SCIENCE CAPITAL INFORMED EXPERIENCE

- Recognise using scientific skills (Inc. team work, finding and using evidence, communication, creative problem solving, curiosity.)
- Make a personal/ emotional connection with a science experience. (Have the feeling that science or using skills is something that 'I can do')
- Understand the relevance/ usefulness (of science) to (in) our everyday lives and that science isn't just a subject learned in school.



# A SCIENCE CAPITAL INFORMED EXPERIENCE

- Help visitors to feel confident and to make personal connections when exploring our museums
- Encourage people to talk and learn together during their visit
- Encourage & enable people to explore science beyond our museums



# THE ACADEMY

- Bringing together professionals from the formal and informal STEM learning sector, including teachers and others involved in STEM communication and learning, to help engage the widest possible audiences with STEM.
- Underpinned by science capital and wider science engagement academic research and is informed by evidence from over 25 years of our own audience insights and research.

SCIENCE  
MUSEUM  
GROUP

ACADEMY

THE HOME  
OF SCIENCE  
ENGAGEMENT

FOUNDING PARTNER





A young person with dark hair in braids, wearing a dark zip-up hoodie, is shown in profile, looking down at a glowing, spherical object held in their hands. The background is a dimly lit science museum exhibit with various glassware and equipment on shelves, all bathed in a blue light. The overall mood is one of scientific discovery and engagement.

**SCIENCE  
MUSEUM  
GROUP**

**ACADEMY**

THE HOME  
OF SCIENCE  
ENGAGEMENT

## TRANSFORMING PRACTICE



BY EMILIA MCKENZIE  
3 MAY 2018

### DEVELOPING A LEARNING RESOURCES WEBSITE FOR TEACHERS

What we've learned about publishing our learning resources online.



BY AMY DAVY  
24 APRIL 2018

### RESEARCH VISITS: REFLECTING ON GOOD PRACTICE OUT AND ABOUT

When thinking about what science capital in practice can mean, we find it helpful to visit other museums and science centres to find good examples of how they engage their audiences.



BY KATE DAVIS  
8 FEBRUARY 2018

### EXAMPLES OF A SCIENCE CAPITAL APPROACH IN ACTION

The concept of science capital gives us an insight into why and how some people participate in and engage with science related experiences and why some do not.



BY AMY DAVY  
18 JANUARY 2018

### INTIMIDATING OR INSPIRING? FIRST IMPRESSIONS OF A MUSEUM

In November 2017 I was given the opportunity to visit the Museum of Tomorrow in Rio de Janeiro, Brazil.

[transformingpractice.sciencemuseum.org.uk](https://transformingpractice.sciencemuseum.org.uk)

# YOUR TIME TO THINK...

What resonates with you?

What opportunities can this bring you?

What actions will you take forward?

[Lorna.Williams@sciencemuseum.ac.uk](mailto:Lorna.Williams@sciencemuseum.ac.uk)



# **BUILDING INTERNATIONAL PARTNERSHIPS**

**CASE STUDY: RUSSIA**

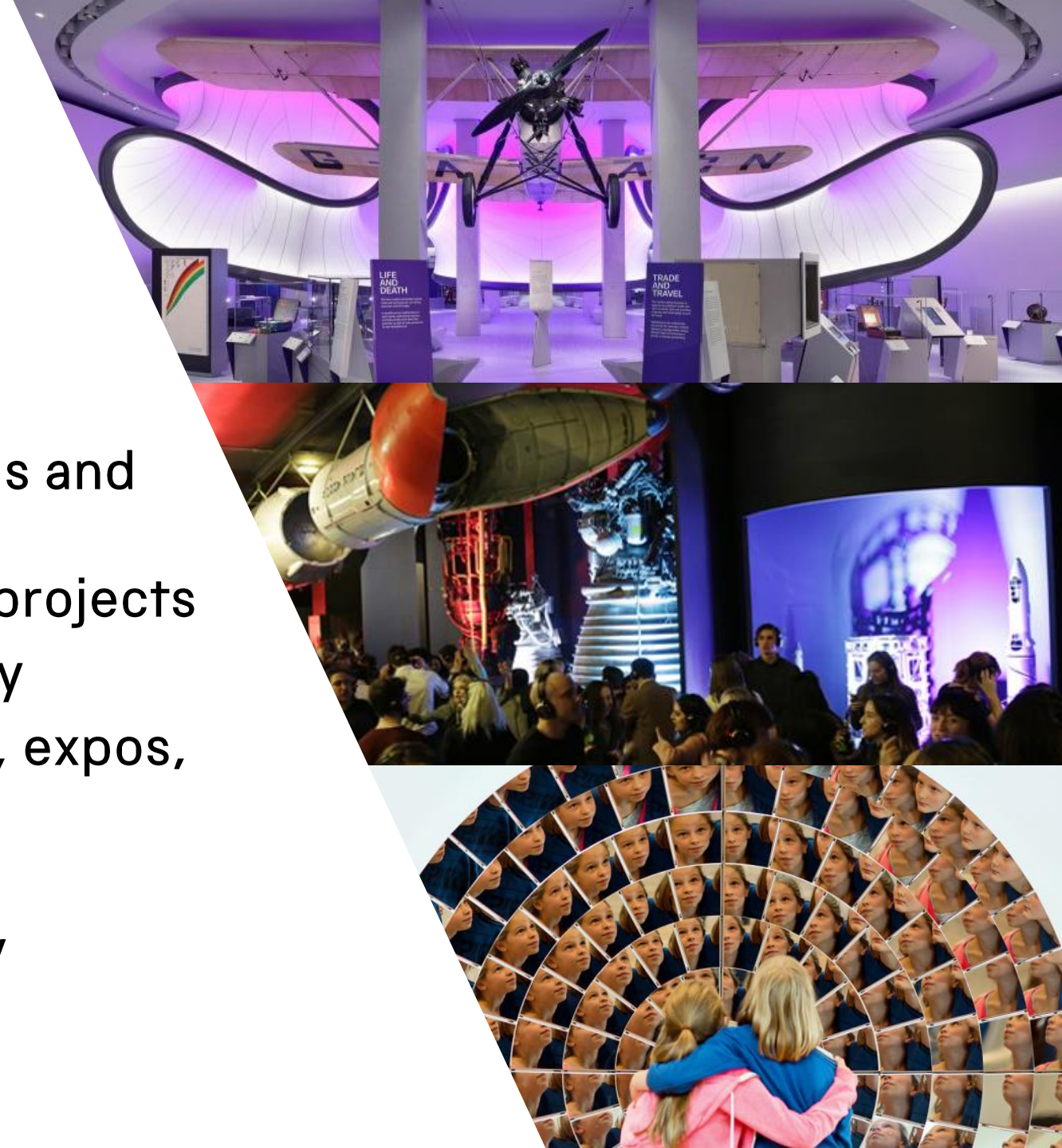
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# INTERNATIONAL ACTIVITIES

- Loans and touring exhibitions
- Partnership working to share skills and expertise
- Joint research and conservation projects
- Contributing to cultural diplomacy
- International showcase (festivals, expos, etc.)
- Learning and outreach
- Providing advice and consultancy

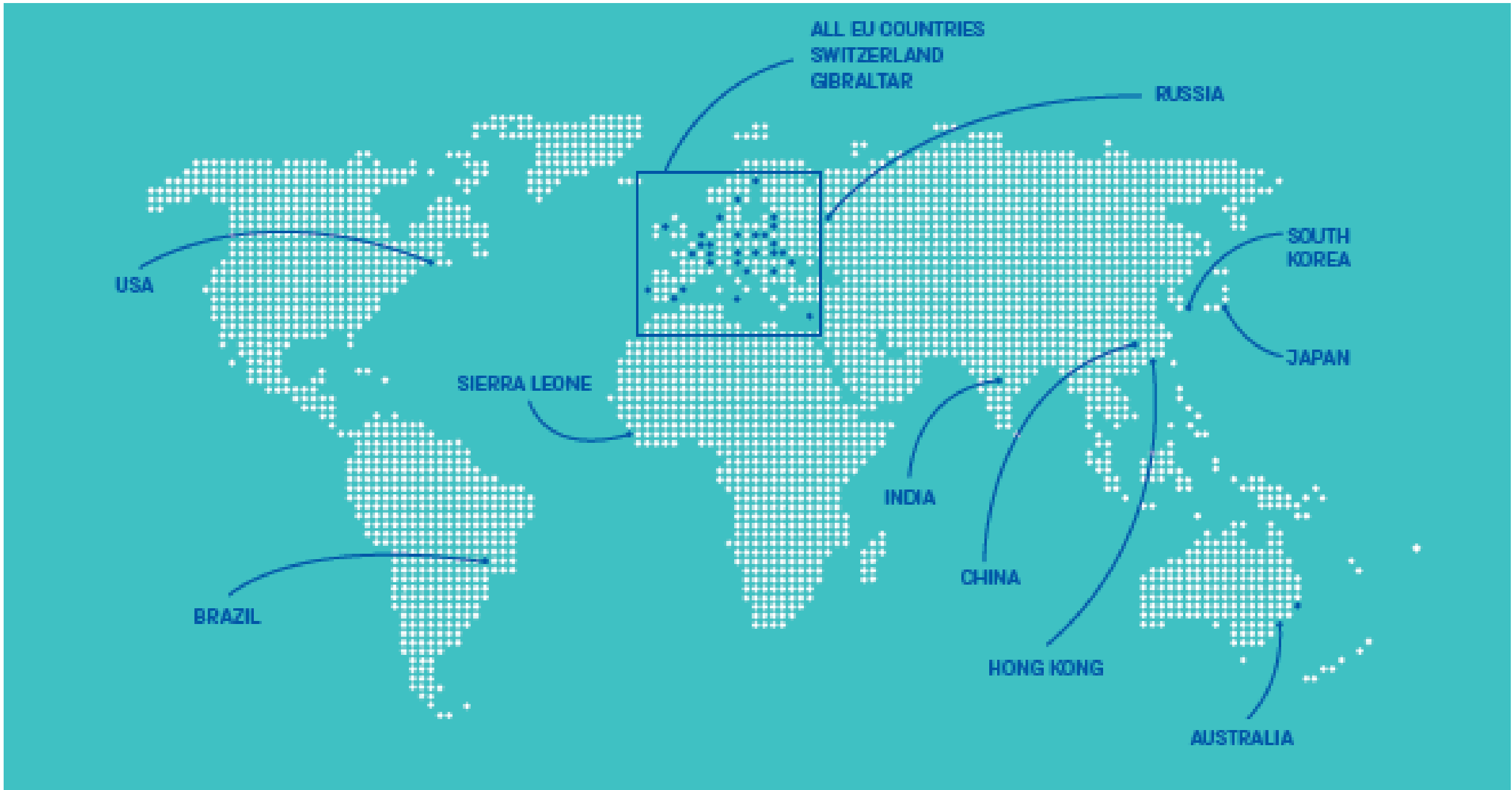


- Grow science capital in individuals and society
- Grow our audiences and exceed their expectations
- Sustain and grow our world-class collection
- Extend our international reach
- Transform our estate
- Harness the potential of digital
- Increase income

**SCIENCE  
MUSEUM  
GROUP**

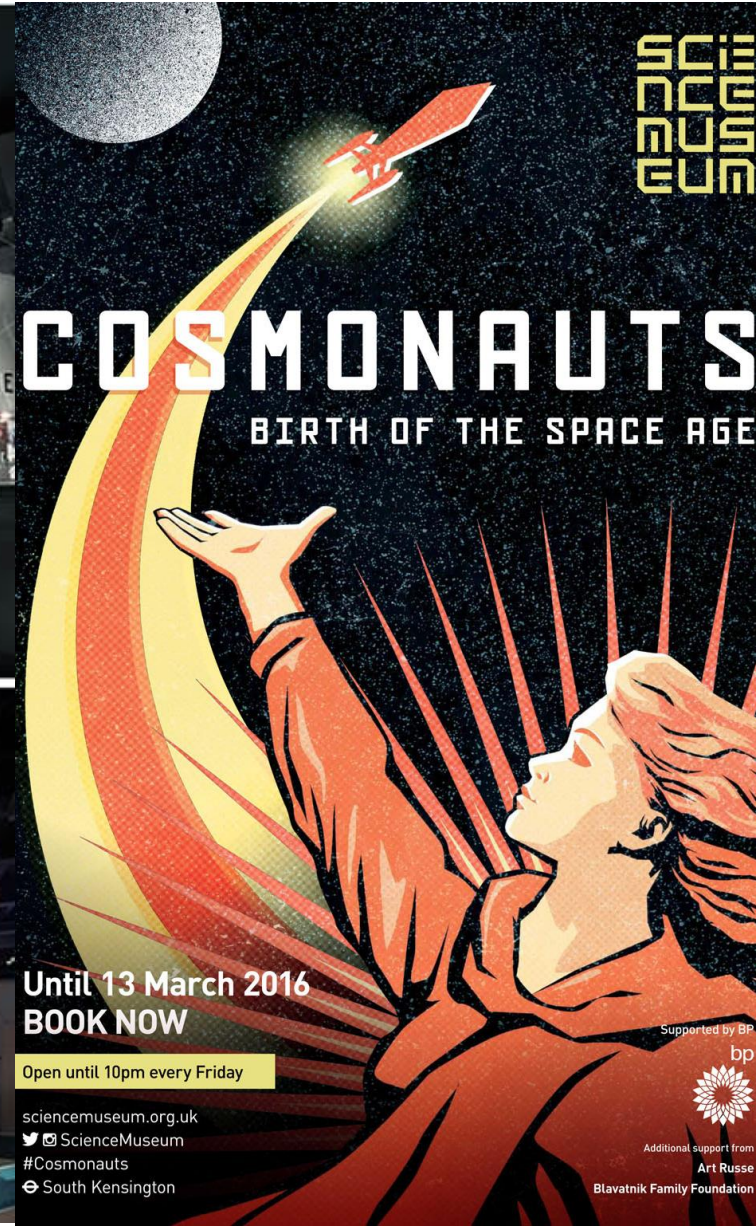
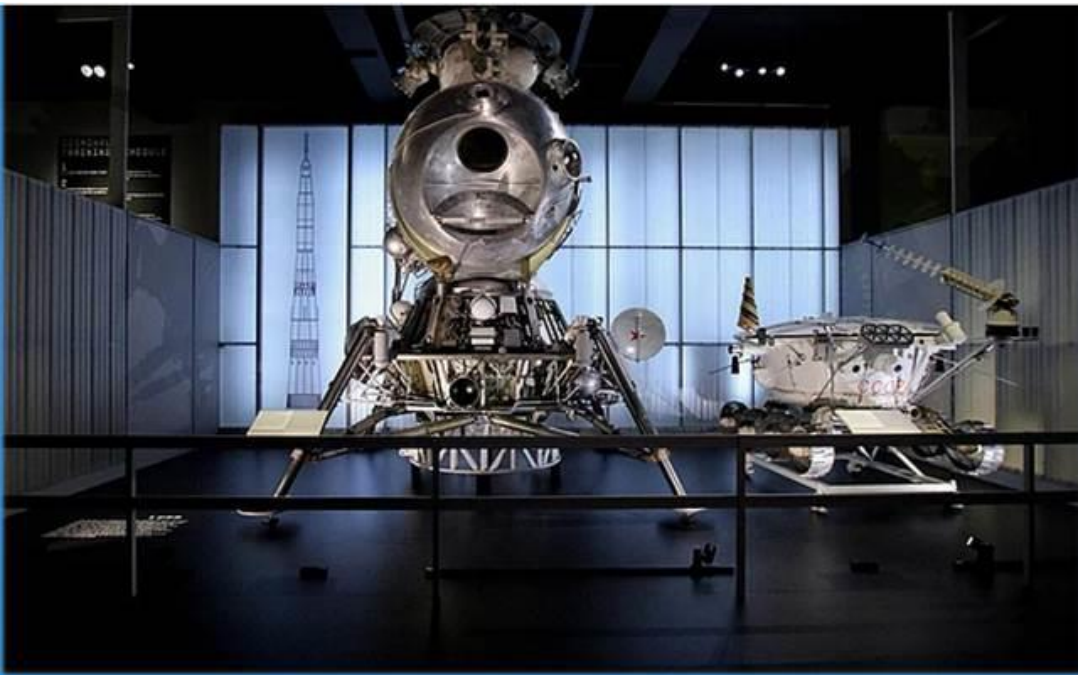
**INSPIRING  
FUTURES**

STRATEGIC PRIORITIES  
2017–2030





# Cosmonauts: Birth of the Space Age



**SCIENCE MUSEUM**  
**COSMONAUTS**  
BIRTH OF THE SPACE AGE

Until 13 March 2016  
**BOOK NOW**

Open until 10pm every Friday

sciencemuseum.org.uk  
@ScienceMuseum  
#Cosmonauts  
South Kensington

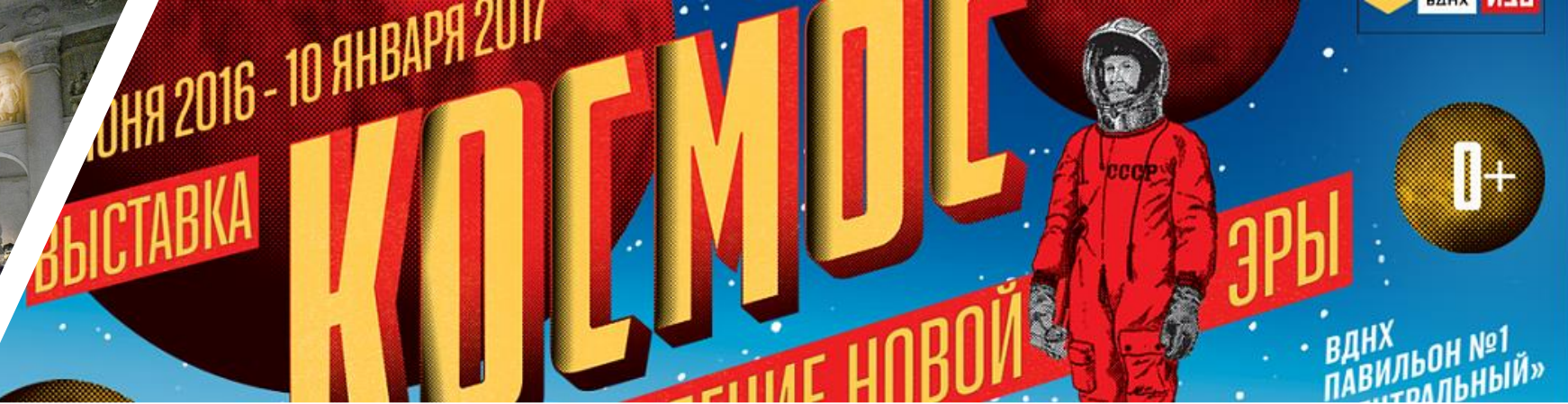
Supported by BP  
bp  
Additional support from  
Art Russe  
Blavatnik Family Foundation

*'Gripping'*  
The Guardian

*'Colossal'*  
The Telegraph







# Moscow, 2017

## Cosmos: Birth of a New Era









- National Science and Media Museum, Bradford
- Locomotion, Shildon, County Durham
- National Railway Museum, York
- Science and Industry Museum, Manchester
- National Museum of Scotland, Edinburgh
- Peterborough Cathedral
- National Museum Cardiff
- Ulster Folk & Transport Museum, Belfast





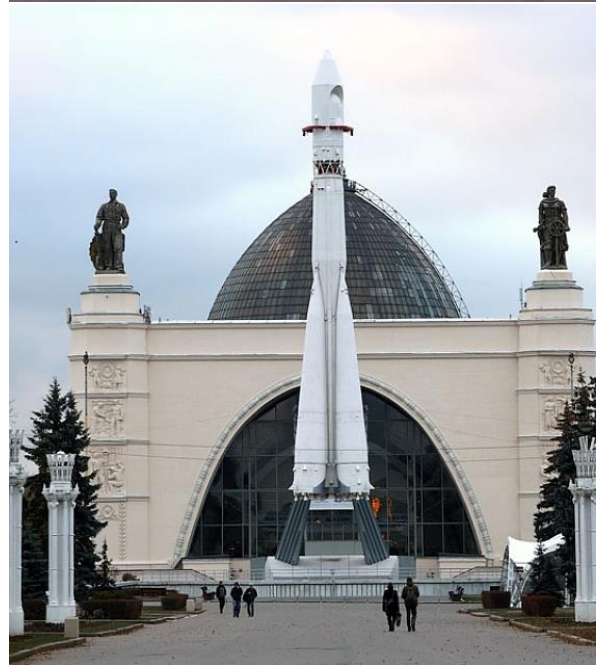
# SCIENCE MUSEUM



## THE LAST TSAR BLOOD AND REVOLUTION

21 SEPTEMBER 2018 – 24 MARCH 2019

[sciencemuseum.org.uk/thelasttsar](http://sciencemuseum.org.uk/thelasttsar)



# Thank you!

Alexandra Smirnova

Strategy & International, Science Museum Group

[Alexandra.Smirnova@sciencemuseum.ac.uk](mailto:Alexandra.Smirnova@sciencemuseum.ac.uk)



**Session:**

**THE BENEFITS OF PARTNERSHIP**

# **Collaboration makes project stronger & more 360°**

**Antonia Caola**

**MUSE – Italy | Head of Communication, Int'l collaboration & PR**



# What I will talk about:

- ✿ To collaborate brings reciprocal advantages
- ✿ Attention to relationship pave the way for good collaborations
- ✿ Hints and tools to make our days easier



MUSE



# The Trento Science Museum

We are here



See  YouTube  
Muse Trento 10

MUSE

# MUSE & its local network



MUSE

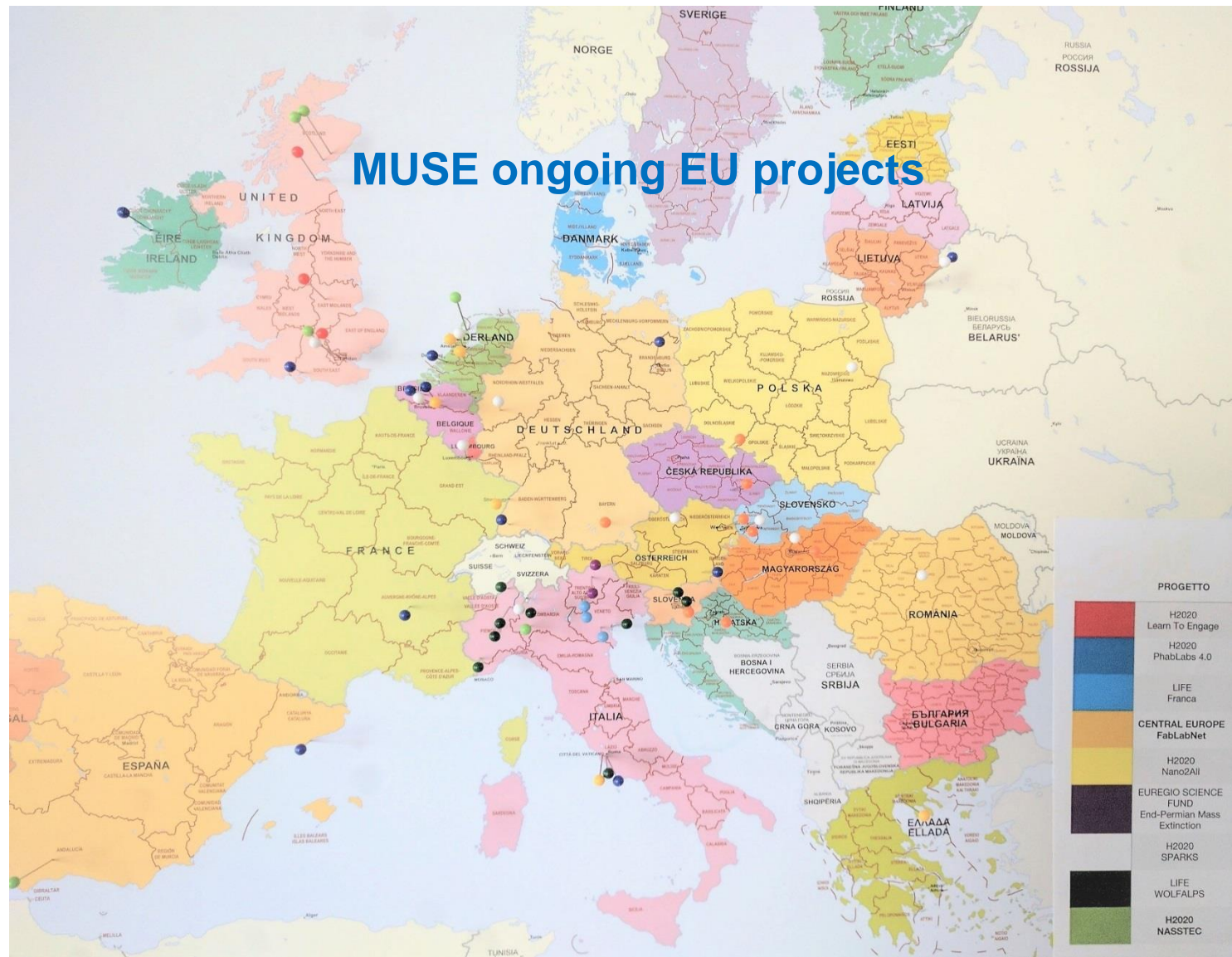


# Partnership is beneficial? How?



MUSE

# Collaboration inside/out





# Individual & teamgroup well-being





# EU-collaboration: two-ways sharing



# Share, share, share... & take



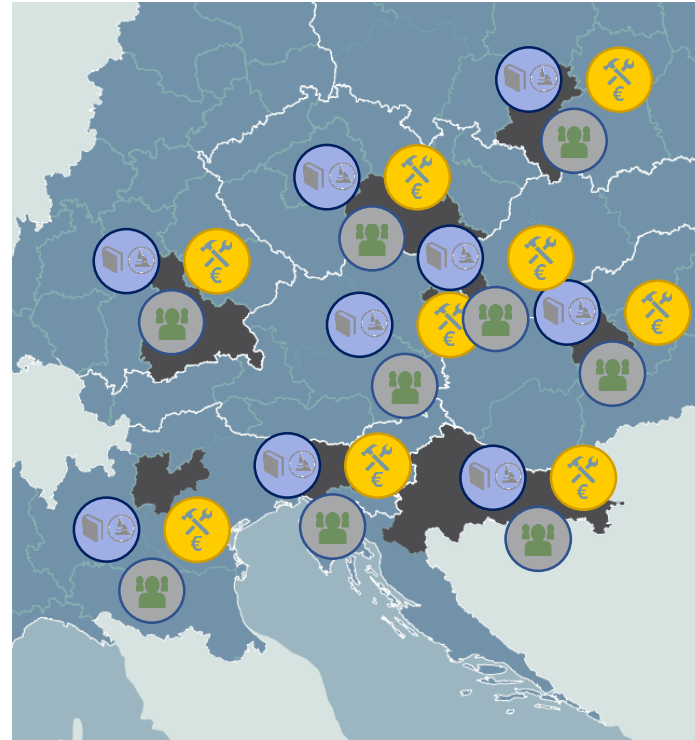
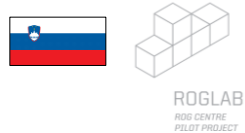
MUSE

# The FabLabNet case study



FabLabNet

European Union  
European Regional  
Development Fund



BRR  
Agencja Rozwoju Regionalnego S.A.  
Bielsko-Biala



strojLAB



FabLab.hr



makerspace

- **3** baseline studies on Innovation ecosystems and FabLabs
- **18** strategy papers based on stakeholders consultations and Smart Specialization Strategies
- **27** exchanges of best practices
- **1** shared FabLab Management Platform
- **40+** storytelling videos and video tutorials
- **3** Pilot Actions concluded – 1000+ persons trained
- **2** FabBusiness Events to promote Pilot outcomes to **real investors**.
- **100+** persons trained within the **European School of Makers**

All free to be downloaded at → [www.fablabnet.net](http://www.fablabnet.net)





# Toolbox

	<b>Tool</b>	<b>Commercial product (i.e.)</b>	<b>Purpose</b>
<input checked="" type="checkbox"/>	Web-based FabLab door and machine interlocks, reservation and billing system	FabMan or other managing tool	Member Management, billing, Lab & Machine booking, access & Security
<input checked="" type="checkbox"/>	Online repository on repair, hack, fix, mod, coding	Instructables, GitHub, iFixit	Sharing ideas and knowledge
<input checked="" type="checkbox"/>	Conference call software	Skype, Zoom, Joinme	Discussing and planning
<input checked="" type="checkbox"/>	Online workspace and cloud-based archive	GDrive suite	Working together and sharing documents
<input checked="" type="checkbox"/>	Online PM software	Asana	Working together and sharing deadlines, tasks
<input checked="" type="checkbox"/>	Newsletter	Mailchimp	Sharing relevant information
<input checked="" type="checkbox"/>	Mailing list	Googlegroup or Mailchimp	Sharing relevant information and communication



# Toolbox

	<b>Tool</b>	<b>Commercial product (i.e.)</b>	<b>Purpose</b>
<input checked="" type="checkbox"/>	Social Media	Facebook, YouTube, Twitter...	Promoting events and informing
<input checked="" type="checkbox"/>	Online depository website	FabLabNet library	Sharing relevant documents
<input checked="" type="checkbox"/>	Low cost accommodation exchange	Home exchange / guest2guest	Human mobility
<input checked="" type="checkbox"/>	Low cost accommodation exchange	workaway	Human mobility
		wwoofing	
		vulca.eu	
<input checked="" type="checkbox"/>	Chat channel	Mattermost, Slack	Fast information exchange, community involvement
<input checked="" type="checkbox"/>	Trading tool/Counting /motivating exchanges	new	FabCoin: own crypto value or Smart Contract - blockchain technology





# Conclusion



Naturally curious

MASSA



**Thank you  
for listening**

**[antonia.caola@muse.it](mailto:antonia.caola@muse.it)**

**MUSE**





Thank  
you!

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