CREATIONS: Engaging your students in science through the arts

Angelos Alexopoulos (CERN)
Scientific knowledge is the product of creative thinking (Osborne et al., 2003)

Science Education Is Woefully Uncreative. That Has to Change
Is science a creative endeavor? Yes! However, most people don’t think so, so our science classes are typically deficient in creativity.

Art is an excellent tool to help students learn science (Ashley, 2011; Merten, 2011)
What is STEAM?

STEAM is an educational and innovation framework bringing science, technology and engineering together with the arts/other disciplines and types of learners with the goal of being more engaging, creative and naturally successful for all members of any educational system.
Students who are involved in the arts are:

4 times more likely to participate in a math & science fair

3 times more likely to win an award for school attendance

4 times more likely to be recognized for academic achievement

Source: Americans for the Arts (2013)
Science&Art@School

1st SciArt workshop, Jun 2013, Graz, Austria

62 students

4 HEPHY schools

2 art teachers

2 science teachers

The Incredible Science-Art Collider by students in Graz, Austria (Image: Michael Hoch)
Science & Art @ School

4 years

>1,000 students

in 7 countries

rhythm of science - art@CMS science&art@school
Vision

- Transfer the research infrastructure culture to schools
- Introduce creativity to science education
- Foster everyday creativity in students
- Generate alternative strategies of scientific inquiry
- Engage students in imaginative activities
- Generate original and valuable outcomes
Pedagogical features

- Individual, collaborative and communal activities for change
- Risk, immersion and play
- Balance and navigation
- Interdisciplinarity
- Ethics and trusteeship
- Possibilities
- Empowerment and agency
Teacher training & support
Teacher training & support

CPD courses

Masterclasses
CREATIONS implementation activities
up to 7 July 2017

288 Activities
596 Schools
12,447 Students
1,192 Teachers

Cultural Collisions at CERN
Ghost Particles - a Global Science Opera - the full broadcast

Particle Physics Masterclass + Photo Contest

In the first week of March 2017, the STFC Rutherford Appleton Laboratory (RAL) ran their annual Particle Physics Masterclass, reaching over 700 A-Level students and teachers. Each day included a series of introductory lectures on particle physics, followed by hands-on experiments and discussions with RAL scientists.
Art & Science across Italy

3K students

38 schools

5 cities

70h project work per school year

I colori del Bosone di Higgs
Percorsi tra arte e scienza

Art & Science across Italy
Aprile 2017 - Aprile 2018
+ Milano + Venezia + Padova + Firenze + Napoli

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https://web.infn.it/artandscience/
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European Physical Society
Forum Physics and Society
I colori del Bosone di Higgs
Percorsi tra arte e scienza

[Art & Science across Italy
Aprile 2017 - Aprile 2018]

Venezia

5 / 12 luglio 2017
Palazzo del Casinò, Lido di Venezia
Lungomare Guglielmo Marconi, 1861
ingresso gratuito

Venice

4 schools
350 students
6 seminars by AMVA4NewPhysics PhD students
39 artworks by 94 students
17 artworks exhibited at EPSHEP2017
Particle Physics Masterclass Photo Competition

Incredible Science, Inspirational People, Astounding Places...

605 students  86 teachers  48 schools

Rutherford Appleton Laboratory
@STFC_Matters
Introducing Students to HEP: Fine Arts & Dance

Check UniBham poster on 3rd floor!

Physics & Fine Arts

Particle Dance

Follow the action on Twitter!
@PP_UniBham @kostas_nikolop
Global Science Opera

294 students   40 teachers   16 schools   14 countries
Stay tuned!

Web: www.creations-project.eu

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