

Welcome

Welcome to this Newsletter where we take the opportunity to tell you a little of what has been going on with STE(A)M in Junior Cycle.

The Vision

To provide Junior Cycle Teachers with rich STE(A)M CPD experiences in keeping with national and international best standards; this provision will allow for interdisciplinary responses to societal challenges in subject-specific and cross-curricular contexts.

Context and Rationale

Innovative and creative solutions to real life societal issues such as Climate Change, Issues of Human Health, Ethical Use of Data and Maintaining Biodiversity are often found in the margins between disciplines.

Junior Cycle reform provides for the development of transversal learning opportunities that both enhance and transcend subjects.

STE(A)M in Action in Schools Initiative – A New Direction

This year we decided that an opportunity existed to further support the development of STE(A)M thinking in schools. We

felt that that learning outcomes in specifications presented an opportunity for teachers to support students in connecting classroom learning to real world contexts. In September 2021 the JCT STE(A)M team put out a call for schools to participate in a pilot project entitled STE(A)M in Action in Schools. 20 schools from across the country were selected to participate in this pilot project.

What is the project about?

1. The STE(A)M in Action schools project provided time and opportunity for collaboration between teachers in school from different subject areas.
2. Teachers were supported to help students make meaningful and authentic connections between learning in different subjects.
3. Teachers engaged with students implementing a small STE(A)M in Action Project in their school. Participating in this project supported students in connecting classroom learning with real world societal issues and problems.

Shared Learning Event

In April 2022 teachers and students from around the country gathered to share their learning from engagement in this initiative and to experience some more STE(A)M thinking in workshops hosted by JCT and AMGEN Biotech

Experience, AMBER, CÚRAM and BIAZA.

Please click [here](#) or the image below to hear from students who participated on the day.



To find out more about the initiative and to access some resources which may be useful to stimulate STE(A)M thinking in your classroom follow this link [here](#).

STE(A)M in Junior Cycle Online Events

This year JCT collaborated with 11 partners to once again bring an online series of elective CPD in February and March.



Thank you to the 500+ teachers who registered to participate in these events. This CPD has both subject-specific and cross-curricular relevance and supports teachers in connecting classroom learning to real world contexts. As



as a result, we had teachers of Visual Art, MFL, Digital Media Literacy, CSPE, Technologies, Maths, Science, Geography, History, Home Economics, English, Music and Business Studies attending this year.

The Workshops

| DATE | TIME | WORKSHOP | DESCRIPTION |
|----------------------|--------------|---|--|
| Tuesday 1st Feb | 7pm - 8.15pm | Artificial Intelligence: Trading your Data | Artificial intelligence (AI) is a branch of computer science that aims to create machines that can think like humans. It is used in a wide range of applications, from self-driving cars to medical diagnosis. This workshop will explore the ethical implications of AI and how we can ensure it is used responsibly. |
| Monday 7th Feb | 7pm - 8.15pm | The Value of Nature | Nature provides us with many benefits, from clean air and water to food and medicine. However, human activities are causing environmental damage and threatening biodiversity. This workshop will explore the value of nature and how we can protect it for future generations. |
| Thursday 10th Feb | 7pm - 8.15pm | Climate Resilience in a Risky World | Climate change is causing extreme weather events and sea level rise, which are putting our world at risk. We need to build resilience to these risks and adapt to the changes that are already happening. This workshop will explore how we can build resilience and adapt to a changing world. |
| Wednesday 16th Feb | 7pm - 8.15pm | Engineering for a Sustainable Future | Engineering is essential for creating a sustainable future. We need to design products and systems that are efficient, durable, and environmentally friendly. This workshop will explore how we can use engineering to create a sustainable future. |
| Thursday 1st March | 7pm - 8.15pm | Going Green with Geothermal Energy | Geothermal energy is a clean, renewable source of power. It is generated by the heat from the Earth's interior. This workshop will explore how we can use geothermal energy to power our homes and businesses. |
| Thursday 9th March | 7pm - 8.15pm | The Superpowers of Slime | Slime is a fun and popular toy, but it is also a great example of a material with unique properties. This workshop will explore the science behind slime and how we can create our own superpowers of slime. |
| Monday 14th March | 7pm - 8.15pm | "Think Red" to Reduce the Impact of Digital | Digital technology is changing the way we live and work. However, it is also causing environmental damage and threatening biodiversity. This workshop will explore how we can reduce the impact of digital technology and create a sustainable future. |
| Tuesday 22nd March | 7pm - 8.15pm | Building Our Future | We need to build a better future for ourselves and for the planet. This workshop will explore how we can build a better future by working together and using our creativity. |
| Monday 28th March | 7pm - 8.15pm | Climate Action: Can I get my hands dirty? | Climate change is a global problem that we all need to solve. This workshop will explore how we can take action to reduce our carbon footprint and create a sustainable future. |
| Wednesday 30th March | 7pm - 8.15pm | The Future of Food | Food is essential for life, but it is also causing environmental damage and threatening biodiversity. This workshop will explore the future of food and how we can create a sustainable food system. |

Artificial Intelligence: Trading your Data ADAPT

In this workshop facilitators from ADAPT examined the Artificial Intelligence (AI) devices that we use every day. Do you know what data we give them? What data is being collected about you and how is it being used? There was also the opportunity to consider whether the trade-off between 'free' use of services and personal data represents a good deal for the consumer.

Resources for this workshop are available [here](#).

The Value of Nature

BIAZA

In this interactive workshop facilitators from BIAZA offered people the opportunity to reflect on the value we place on nature. The relative value of our consumption against the environmental impact of that consumption was explored. You will identify actions that can be taken to support nature, as individuals and in our classrooms and learn about the work BIAZA does in this context.

Resources for this workshop are available [here](#).

Climate Resilience in a Risky World WWGS

This workshop supported participants in considering climate change through a new lens. Participants in this workshop also had the opportunity to consider how resilience in the face of adversity is part of the solution to climate issues. Creativity is a key underpinning of climate resilience with lessons to be learned from across the world.

Resources for this workshop are available [here](#).

Engineering for a Sustainable Future

Rediscovery Centre

This interactive workshop, facilitated by The Rediscovery

Centre, explored sustainable engineering design principles in the context of a circular economy. It was considered how a sustainable approach to finding solutions to the challenges we face can help us both solve problems and create new opportunities. Can embracing sustainability drive innovation?

Resources for this workshop are available [here](#).

Going Green with Geothermal Energy

iCRAG & GSI

We don't often consider geothermal energy in an Irish context and yet developments in technology mean it has potential to become a sustainable, clean, and potentially limitless heat source for the island of Ireland. Join the Irish Centre for Research in Applied Geosciences and Geological Survey Ireland for this interactive workshop where we explored geothermal energy utilisation across the world and considered how geothermal energy could be applied in the Irish context.

Resources for this workshop are available [here](#).

The Superpowers of Slime

CÚRAM

This interactive workshop highlighted the remarkable capabilities of some marine organisms which have evolved to

produce unique and diverse compounds, including slime. CÚRAM scientists are researching these slimes because of their potential for use in our bodies and it was considered how conservation of the biodiversity of our oceans affords us the opportunity to further explore the unique chemistry of these slimes and their potential applications to medicine. The workshop also showed how to custom-design your own slime recipe for classroom use.

Resources for this workshop are available [here](#).

“Tech-ing” in the Future: The Impact of Rapid Technological Advancement

CONFIRM

Technology is impacting not just what we teach but how we teach. During this workshop facilitators from CONFIRM demonstrated some current and future technologies and considered their potential use in the classroom. What might be the ethical concerns, societal impact and economic impact? Industry 4.0 - are we ready for what is happening now and what might happen in the not-too-distant future?

Resources for this workshop are available [here](#).

Insulating our Futures

SEAI

This interactive workshop with SEAI facilitators took a look at how

insulation and conductivity of heat can be explored in the classroom while connecting classroom learning to real world data. Participants had the opportunity to interpret energy trends over the past 3 years and engaged with freely available real world data to consider how our carbon footprint is connected to the very structure of the homes we live in.

Resources for this workshop are available [here](#).

Climate Futures: Can STE(A)M Thinking Save Us?

AMBER

Suggested solutions to climate change involve everything from individual behaviour change, community and political action, through to purchasing high-tech products. But how did we get here, how might our responses change in the future and how do we prepare young people to navigate this uncertainty?

Resources for this workshop are available [here](#).

Open Research: The Good, The Bad and The Ugly of Open Sharing of Research Outputs

AMGEN

The movement towards open research is growing. What is it? How does it impact the research process? Facilitators from Amgen Biotech Experience explored the pros and cons of making research outputs freely accessible to everyone. This workshop explored

how access to research supported our responses to the current pandemic but moved to consider the wider implications, opportunities and challenges of open research in our connected world.

Resources for this workshop are available [here](#).

What Teachers said about STE(A)M in Junior Cycle this year

“Very enjoyable, relaxing, yet full of energy and information”

“I love the real-life examples to bring to class”

“The resources and methods of learning and discussing were really thought provoking and engaging”

Stay in Touch and Encourage Others to Connect!



- Share this newsletter with colleagues
- Follow us on twitter [@JCTSteAm](#)
- Use #steaminaction to share classroom practice
- Visit our webpage www.jct.ie/steAm

Regards, The JCT STE(A)M Team