



# STEM 2025 CONFERENCE

**Centre for  
Professional  
Development**

**Franklin**  
Sixth Form College

**Ofsted**  
Outstanding  
Provider

#SEETOURFUTURE



# WELCOME

Welcome to Franklin's 6th annual STEM Conference. The event grows stronger every year, and this year, we are thrilled to welcome students from over 20 local schools.

The participation of each school highlights the importance of STEM education and collaboration among our educational communities. The conference aims to connect Y10 students with STEM subjects and encourage them to continue with science and maths post-16.

Throughout the conference, students will have the opportunity to take part in exciting showcase events, interactive workshops and talks with 27 exhibitors, all looking to share innovative ideas and inspire the next generation of biomedical or mechanical engineers, teachers, geologists, chemists and statisticians. The list is endless, as are the career opportunities, many of which are right on our doorstep, here on the Humber Estuary. This event belongs to the students who attend. Please make the most of the day, ask lots of questions, and most of all be inspired!

Following the STEM event, we welcome you to our annual Careers and Progression Evening, where over 90 exhibitors will be available to discuss progression to university, employment and apprenticeship opportunities.

**WENDY ELLIS, PRINCIPAL & CEO**







**Waltham Toll Bar**  
**Academy**



“ We recognise that STEM is a popular career pathway in our local area, and we are committed to providing our students with the rich opportunities they deserve to explore this sector and gain valuable experience. Humberston Academy is excited to be part of the STEM conference and exhibition and proud of the positive partnership we have with Franklin College. ”

**DANIEL SHOUBRIDGE, PRINCIPAL OF HUMBERSTON ACADEMY**

# WHAT IS STEM?

STEM stands for Science, Technology, Engineering, and Mathematics—subjects that can be linked to almost anything in our daily lives. It's where curiosity meets creativity to shape the future. Whether it's developing the next big app, discovering life-saving medical breakthroughs, or exploring the incredible mysteries of space, STEM offers endless opportunities to make a difference in our world.

Studying for a future career in STEM isn't just exciting; it opens doors to endless possibilities. From working with AI as a researcher, software development and medical equipment design to building robots and renewable energy systems, STEM is interconnected, helping us to understand how the world works and offering some of the most incredible careers.

There are 9.4 million people currently working in STEM industries, with jobs in STEM predicted to grow by 7.8% over the next 10 years. So, whatever your interests and career aspirations may be, you'll never be short of options with STEM. See your future with us by choosing from subjects like Chemistry, Biology, Physics, Further Maths, Maths, Engineering, Computer Science, Applied Science and Science!



SCAN HERE

FIND OUT MORE  
ABOUT OUR  
AMAZING COURSES



“ The STEM Event was awesome. I can't wait to come to Franklin and study Engineering. ”





**JOBS IN STEM ARE  
PREDICTED TO GROW BY**

**7.8%**

**OVER THE NEXT 10 YEARS**

**THERE ARE  
9.4 MILLION  
PEOPLE CURRENTLY WORKING  
IN STEM INDUSTRIES**

# OUR COURSES

SCAN HERE

EXPLORE OUR COURSES AND FIND OUT MORE



Studying STEM subjects at Franklin opens a world of opportunity. If you're passionate about solving problems, interested in innovation, and want to make a real difference in the world, our traditional STEM courses are for you. They'll challenge you to think differently, explore key scientific ideas, and unlock your full potential. Taking your first step with us towards an exciting future in STEM will give you a head start on your journey to your dream career.

Choose from our wide range of exciting and innovative STEM subjects and find your perfect combination:

Maths

Further Maths

Biology

Physics

Engineering

Applied Human Biology

Computer Science

Health & Science (Supporting Adult Nursing)

Applied Science



Science

Digital Games Design

Chemistry

Creative Computing

## MORE STEM COURSES!

You can also choose from these complimentary STEM courses. They work well with our more traditional STEM subjects and open the door to a wide range of university courses and apprenticeships when you finish your studies at Franklin:

- Economics
- Finance
- Digital Production, Design and Development
- Health and Social Care
- Applied Psychology
- Psychology
- Sport
- Physical Education.





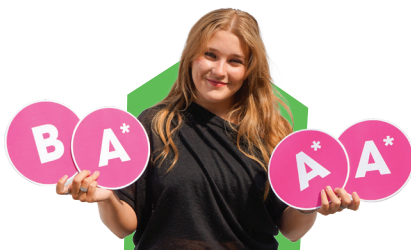
Taught by our fantastic teachers, you'll not only develop your knowledge, you'll gain the skills that universities and employers in the industry want and need. You'll also take part in our Personal and Professional Development programme, where you'll hear from guest speakers, take part in trips and visits, and have the opportunity to choose from over 70 clubs and societies, all designed to fit your future goals and aspirations.

Whether you dream of becoming an architect, want to make a difference as a doctor or are ready to explore careers in the innovative world of chemical, mechanical or electrical engineering, there has never been a more exciting time to begin your journey to a future in STEM with Franklin.

## Meet our STEM class of **2024**



**HENRY**  
**LOUTH ACADEMY**  
BTEC Extended Diploma  
in Sports Coaching



**EVE**  
**HEALING ACADEMY**  
Biology, Chemistry,  
Maths & Further Maths



**JACIE**  
**HUMBERSTON ACADEMY**  
Health & Social Care &  
Sports Leadership Academy



**LILLIE-MAE**  
**SOMERCOTES ACADEMY**  
Biology, Chemistry & French

**OVER  
95%** OF OUR STUDENTS LEAVE  
FRANKLIN AND GO ONTO  
UNIVERSITY, HIGHER  
APPRENTICESHIPS, OR  
STRAIGHT INTO  
EMPLOYMENT

# Centre for Professional Development

Working with key local and regional employers and stakeholders, we have developed our nationally recognised Centre for Professional Development (CfPD), a unique way of bridging the gap between employer needs and the skills of local young people.

Our dedicated CfPD team works with employers, universities, and apprenticeship providers to give you the professional skills you need for a successful future after Franklin. From careers advice, personal and professional development opportunities, work experience and internships to mentoring, employer visits and guest speakers, we ensure that whatever path you choose, you are prepared for an incredible future ahead.



“ The STEM Event gives students in the area the opportunity to look at what careers are available in the industry and take part in some amazing STEM sessions. ”

HANNAH SHANKS, HEAD OF SCIENCE,  
HEALING ACADEMY

SCAN HERE

FOR MORE  
INFORMATION  
ON CfPD





Within CfPD sits our Franklin Professionals Programmes, which have strong local industry connections and are specifically designed to focus on your career pathways, areas of study, and aspirations. These programmes offer those interested in STEM, health & social care, business & logistics, law, teaching, and sport the opportunity to take part in a number of masterclasses, visits, careers events, and talks from industry professionals. For those interested in applying to medicine, veterinary science and dentistry, our Aspiring Future Medics programme offers dedicated workshops, guest speakers and mock interview sessions in preparation for the application process.



SCAN HERE

DISCOVER  
PERSONAL &  
PROFESSIONAL  
DEVELOPMENT

Whether you want to go on to university, undertake an apprenticeship or go straight into employment, the Franklin CfPD team will ensure you are fully prepared for the future and give you a head start in achieving your goals and aspirations.



# WORKSHOPS

## FRANKLIN SIXTH FORM COLLEGE



### Cosmetic Science

Do you have bath bombs, soap and lip balms at home? Have you ever wondered how these are made? In this workshop, you'll learn the process behind cosmetic science and even get to make your own.

### Games Development

What do Rust, Subnautica and Fall Guys have in common? They were all built with Unity. In our session, learn how to use Unity with a 3D kart racing game that you can modify and customise yourself. Complete the 'Creative Mods' to build on the project and make it your own, whilst learning the basics of Unity.

### Social Network Analysis

Did you know that within just three connections, you're linked to every single person on the planet? Prepare to be amazed as we delve into the fascinating realm of social network analysis and discover how interconnected our world truly is. From unravelling the mysteries of networks to exploring the mesmerising world of graph theory, get ready to see your friendships, communities, and interactions in a whole new light.





# ORE CATAPULT



The Offshore Renewable Energy (ORE) Catapult is the UK's leading technology innovation and research centre for offshore renewable energy. Established in 2013, it focuses on accelerating the development and deployment of offshore wind, wave, and tidal energy technologies. Headquartered in Glasgow, Scotland, with its National Renewable Energy Centre in Blyth, Northumberland, ORE Catapult offers world-class open-access research, testing, and validation facilities.

Through collaboration with industry, academia, and government, ORE Catapult drives innovation, reduces costs, and supports the growth of the UK's renewable energy sector. Its initiatives include the Launch Academy accelerator programme, which supports UK companies in developing technology solutions to address challenges within offshore wind.

By providing expertise and state-of-the-art facilities, ORE Catapult plays a pivotal role in advancing renewable energy technologies and contributing to the UK's net-zero ambitions.

## Workshop Details

The workshop will present each group with a real-world challenge currently faced in the offshore wind sector, such as improving the safety of turbine access from crew transfer vessels (CTVs), addressing biofouling issues, or enhancing the integration of robotics within the industry. Students will be given time to develop innovative solutions that surpass the existing methodologies used in the sector. This activity aims to foster creativity, critical thinking, and problem-solving skills among participants while highlighting the diverse career opportunities available within the offshore wind sector beyond traditional technician roles.



Set against the backdrop of a beautiful and historic city, the University of Lincoln sits at the heart of it all on the picturesque Brayford Pool waterfront, with almost everything you'll need either on campus or just a short walk away. The University was awarded Gold, the highest rating possible, in the national Teaching Excellence Framework (TEF) 2023 for delivering consistently outstanding standards of teaching, learning, and outcomes for students.

A range of programmes are offered, including undergraduate, postgraduate and flexible learning. Many of these programmes offer the benefit of placement opportunities, and a range of opportunities to study, work and volunteer abroad. £400 million has been invested into the Brayford Pool Campus over the last two decades to create the best possible learning environment and a strong foundation to help students achieve their goals. No matter which course you choose, the University of Lincoln aims to provide you with high-quality facilities and the latest equipment.

## Life Sciences

Have you ever wondered how far a grasshopper can jump? In this session students will learn all about jumping insects and get hands on experience working with live grasshoppers. Students will work with their grasshoppers to measure how far they can go and collect a data set of how far their insect jumps. Using the data students will discuss as a group how far each grasshopper jumped, and what they noticed whilst working with their bug.

## How do traffic lights work?

Explore how traffic lights work, from the physical wiring connections to the software programming. Have a go at programming our traffic lights yourself and see how the sequence of signal lights can be altered and managed.

## Cognitive Psychology

Through a range of fun activities, you will learn how scientific research informs us about human thoughts, behaviours and judgements. During the session, we will focus on an important and interesting area of cognitive psychology – how and why we recognise people's faces.







UNIVERSITY  
of HULL

# UNIVERSITY OF HULL

For nearly 100 years, we've been teaching people to think differently. Ours is a University with a proudly progressive history and up-to-the-minute facilities – all within a 10-minute walk across a safe and leafy campus. A place full of possibilities and impossible successes, ours is a city that epitomises Northern hospitality and resilience. Where unconventionally brilliant minds join forces to beat the odds. Experience academic excellence and the chance to play your part in tackling the big issues challenging humanity – because we understand they are banging at our very door.

We're writing the future together. Always have. Always will.

## Catapulting into Engineering

In this workshop, you will be working in small engineering teams to construct a catapult capable of meeting given objectives. You will be applying mechanical engineering principles and project management to spend less and accumulate more points to be crowned the winners.

## Critical Care: Paramedic and Operating Department Practice

In this workshop, we'll be exploring the roles of the Operating Department Practitioner and Paramedic. You will get to hear about what it takes to care for the critical care patient both inside and outside of the hospital setting.

## Mathematics of Crime

In this workshop, we will see how we can use graph theory to solve a murder game. If we have time, we will have a quick discussion how we can use mathematics to solve or predict where real crimes will happen.



# CATCH

Our CATCH facility in Stallingborough offers the most industry led, employer-focused apprenticeship programme in the Yorkshire & Humber region. By utilising our industry knowledge, networks and connections and working closely with employers, we have developed specialised and enhanced apprenticeship programmes ready to deliver to the next generation of industry professionals. Encompassing mechanical, electrical, instrumentation, process operations, welding, pipefitting and plater specialisms.



## Workshop Description

Take part in interactive and practical sessions linked with their specialised trades - mechanical, electrical, welding and process. This will include virtual experiences.





**BISHOP  
GROSSETESTE  
UNIVERSITY**

# BISHOP GROSSETESTE UNIVERSITY

With award-winning teaching, outstanding student support, and beautiful campus facilities, your story here is waiting to begin. At the heart of our campus, we boast a team of educators and colleagues dedicated to enriching the lives of our students. Situated only a 10- minute walk from the historic Lincoln Cathedral, there is so much to explore alongside your studies. Whether your passion is primary education, archaeology or psychology, from a foundation year to a PHD – you'll join our community of over 2,000 students all designing their own future.

## **Increasing Physical Activity Levels Via Exergaming**

It is estimated that over 64% of the UK population is overweight or obese, with one in four children being overweight or obese by the age of 11. Exergaming, a combination of exercise and gaming, is a relatively new and exciting form of exercise which may provide an alternative to 'regular' exercise, helping to combat the rising levels of obesity among children and adolescents within the UK. This session will highlight the benefits of exergaming among a range of populations with the hope of reducing sedentary behaviours.





# ØRSTED

Ørsted is a renewable energy company that takes real action to fight climate change in the UK and all over the world and is most well known for being the global leader in offshore wind.

# Orsted

The East Coast Hub, on the Port of Grimsby, operates six offshore wind farms including the world's largest – Hornsea 2 – officially named the 'world's largest offshore wind farm by capacity' in the Guinness Book of World Records. There are over 130 different roles based out of the Hub, from engineers to offshore coordinators, environmental specialists to media managers, health and safety managers to project coordinators. Your job role could be onshore or offshore or a mixture of both with opportunities to work hybrid from home. Your career could take you down many different pathways right on your doorstep and apprenticeship opportunities are available from age 16+.

## Building a Wind Farm

What does it take to build a wind farm? We'd love to see you take on the challenge! You'll be given materials, a budget and a countdown to see if you can work together to complete the brief. Who knows what challenges will come up on the way. A storm in the middle of the North Sea or a tight budget with ever-changing prices? This challenge will test your teamwork and initiative.





**Leeds Trinity  
University**

# LEEDS TRINITY UNIVERSITY

At Leeds Trinity University, we believe in the power of action. Not just envisioning the future ahead, but actively creating it. Our Catholic values and civic virtues fuel this unyielding spirit. Here, we lead with dignity, compassion, and respect, reflecting our drive for social justice in the way we teach, collaborate, and prepare our students to become catalysts for change.

## **AI & Cyber Security**

Explore the exciting worlds of Artificial Intelligence and Cyber Security in our hands-on workshops designed to inspire your passion for technology and prepare you for future careers! Through interactive sessions, you'll dive into the transformative impact of AI on industries and the job market, explore engaging concepts like encryption and digital security, and experience how our courses equip students with the skills to lead in these fast-evolving fields.

With access to a wealth of learning resources, real-world examples, and expert guidance, you'll gain insights into these dynamic subject areas while trying out practical activities that bring them to life. This is also your chance to learn about the cutting-edge courses we offer at our university and how they prepare you for tomorrow's opportunities. Don't miss this opportunity to explore your future in tech and be part of an inspiring journey into innovation!

## **Biomedical Sciences**

Urine dipsticks are regularly used in the NHS for the easy diagnosis of many common conditions e.g. urinary tract infections, kidney injuries/infections and even to track glucose in diabetics. During this session, you will be given some basic information about some patients along with their urine samples. After using a dipstick in the urine, you will observe colour changes on the stick and use these to interpret results. Hopefully, with the information provided you will be able to diagnose your patients!



# TECHNICA

Technica is an independent Grimsby-based company made up of a dedicated and close-knit team of multi-disciplinary engineers, designers and draughts people who use their knowledge and expertise to provide frameworks for multi-million-pound gas network projects.

Technica also has extensive experience in procurement, installation and measurement services that help deliver and execute every project to the highest level of precision.



## Fundamentals of E,C&I Engineering

This interactive session will explore the fundamentals of E,C&I engineering through real-world problem-solving and team challenges.

Participants will have the chance to work alongside professional engineers & designers to gain insights into various engineering disciplines. Ideal for future problem solvers, this workshop aims to inspire the next generation of engineers whilst promoting teamwork and critical thinking skills.





Sheffield Hallam University (SHU) is a leading knowledge applied university dedicated to providing students with hands-on experience wherever possible. Our approach

ensures that students are well-prepared for successful careers in their chosen industries. We pride ourselves on fostering an environment where practical skills and academic knowledge go hand in hand, setting our graduates apart in the competitive job market.

## **An Intro to Computing**

Join us for an insightful workshop on computing, where you'll have the opportunity to delve into the world of computer science at university level. This session offers a glimpse into university study and provides a taste of what to expect from a computer science program.



# RWE

## RWE x LAB RASCALS



With more than 125 years of successful history behind us, RWE has undergone fundamental change and is now a leading supplier of renewables worldwide. With wind farms, solar power and battery storage facilities in many countries. Even today, most of our core business is green electricity.

And we want to get better and better, investing €55 billion in renewables between 2024 and 2030 and entering the promising hydrogen technology at full speed. Together, we have achieved a lot, and we will continue on our path: For a sustainable future, for achieving net zero emissions by 2040 - for the best energy company we can be!

### Workshop Description

Hosted by Lab Rascals, explore the dynamic changes shaping our planet in this 35-minute planetarium show. Using stunning satellite imagery, it reveals how rising global temperatures are melting glaciers and threatening coastlines worldwide, offering a breathtaking look at Earth's evolution.





# RWE

## RWE x UKSTEM

UKSTEM develops and delivers high-quality educational consultancy and resources that inspire young people and foster understanding. Led by Mike Cargill, the company has developed since setting up in 2015 and works closely with several

universities, private clients and local authorities both throughout the UK and beyond. At UKSTEM we pride ourselves on staying ahead of the competition by setting a high bar for educational engagement.

Working in partnership with Sofia Wind Farm, UKSTEM develops and delivers high-quality educational consultancy and resources that inspire young people and foster understanding of the offshore wind energy business. Supergrid is the flagship activity that has been delivered to many thousands of students across schools, colleges and universities, and we're delighted to be able to bring it to Franklin STEM Conference.

### **The Supergrid Challenge**

Be the most competitive energy supplier in The Supergrid Challenge. In this part simulation part practical STEM based business game you'll be tasked with finding the best blade number/size/angle/shape combo that optimises your output and allows you to win by slashing your energy prices!





# UNIVERSITY CAMPUS NORTH LINCOLNSHIRE

UCNL is a custom-designed higher education learning facility located alongside Central Park on the outskirts of Scunthorpe town centre. We host an innovative Institute of Technology, along with industry-leading equipment for our students to learn practical skills which are essential for their growth as a student and for their chosen future career path. We partner with employers, leading universities, and national training experts to offer courses that meet local and regional needs. We are proud to offer a wide choice of courses, all designed and delivered to help people from every background transform their life through the benefits of education. Our mission and passion are about helping you succeed.



## **Construction: Exploring the use of VR in Construction, visualising spaces designed in CAD in 3D.**

Join us to discover how technology is reforming construction in our VR workshop.

## **Engineering: Meclab stations an experience of a miniature production line, and the components required for cutting edge automation.**

Automation and Mechatronics laboratories offer an enriching experience that encompasses digital engineering technologies with industry 4.0. Experience this for yourself in our interactive meclab workshop.

## **Medical Bioscience Blood Under the Lens: A Journey into Haematology**

Are you interested in medicine, science and health related topics? This hands-on activity will show you how to determine blood types and examine blood slides under a microscope.

## **Digital Technology: Data Treasure Hunt**

Join us for our interactive workshop into the digital data world, dive into the fascinating world behind the data on our phones with an exciting treasure hunt game!



# BAE SYSTEMS

## BAE SYSTEMS

At BAE Systems, we provide some of the world's most advanced, technology-led defence, aerospace and security solutions. We employ a skilled workforce of around 100,000 people in more than 40 countries.

Working with customers and local partners, we develop, engineer, manufacture, and support products and systems to deliver military capability, protect national security and people, and keep critical information and infrastructure secure.

### **BAE Systems Aircraft Maintenance Academy**

Find out all about apprenticeships with BAE Systems with apprentices currently taking part in their Aircraft Maintenance Academy! The workshop will include a presentation, Q&A and plenty of goodies.



# JACKSON CIVIL ENGINEERING

**Jackson**

Jackson is a regionally structured civil engineering firm with national capabilities. We have a strong reputation as a family-oriented business, and we pride ourselves on our 'people first' approach. Organised by region, Jackson's two specialist divisions are Highways and Environment Agency projects, and our main head office is in Ipswich. Our values run through every aspect of our business. They represent what we stand for, and ensure we stay true to our GOODWORKS ethos. The pillars that underpin what we do are, Health and Safety, Environment, Collaboration, Supply Chain and Social Value.

The project Jackson is delivering closest to Franklin College is at Stallingborough. We are working on behalf of the Environment Agency placing almost 90,000 tonnes of rock along a 4.5km stretch of coastline. Once complete, these new defences will benefit 2,300 properties, nationally important infrastructure, vital industry, and areas outlined for future development.

## Environmental Engineering

A brief overview of the work being undertaken at Stallingborough, looking at our impact on the environment. Followed by a creative activity where you will deep-dive into the life of Environmental Consultant, Colin Wheatcroft and how an email from a distant planet has brightened his morning!





# QUICKLINE

**QUICKLINE**  
Broadband built for you

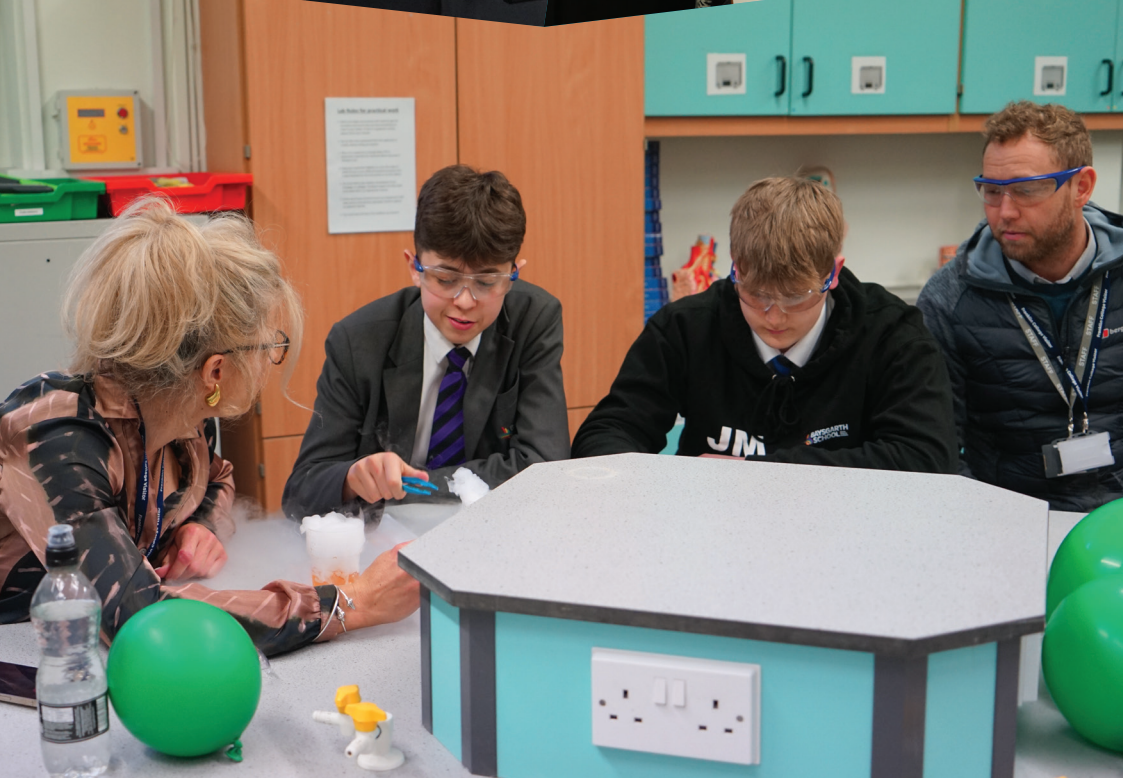
Quickline Communications is one of the UK's fastest-growing broadband providers, dedicated to delivering rapid, reliable connectivity to rural communities across Yorkshire and Lincolnshire. In addition to broadband services, Quickline is deeply invested in supporting local communities through a comprehensive social value programme. This includes partnerships with schools, charities, businesses and social enterprises to drive change and regeneration in rural areas.

## All Things Quickline

Join the Quickline team to learn how a fibre to the property installation works, and take part in a practical activity with their home set-up demo board and a fibre splicing kit.



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# STEM CONFERENCE

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GrantScape 

East Coast  
Community Fund

Supported with funds from the East Coast Skills  
Fund, administered by GrantScape.

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 **www.franklin.ac.uk**

    **@FranklinGrimsby**

**Franklin**   
Sixth Form College

**#SEEOURFUTURE**