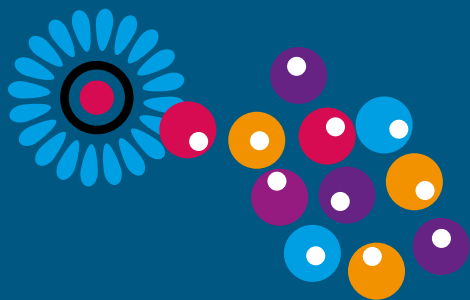


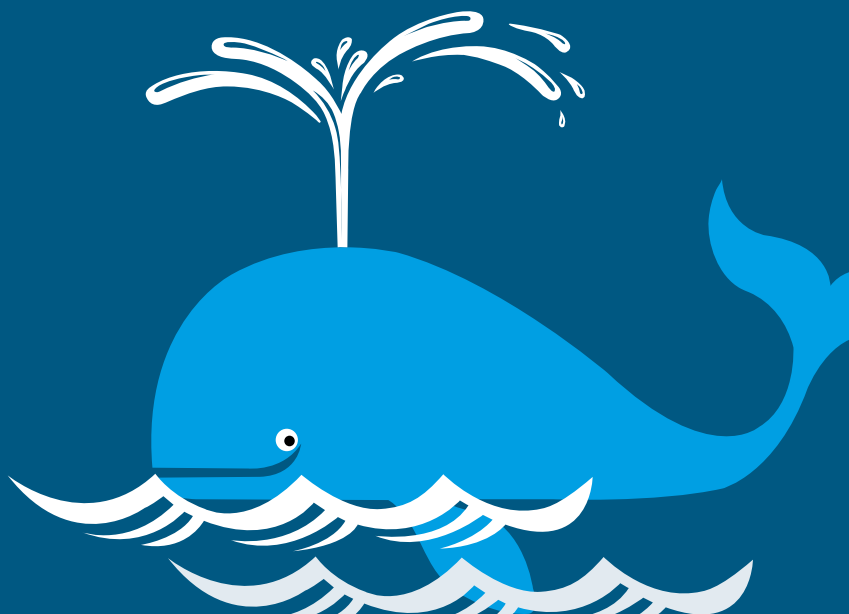
NORWICH SCIENCE FESTIVAL

LEARNING PROGRAMME
15-17 OCTOBER 2018



Organised and hosted by

the
forum



WELCOME!



Welcome to three days of exciting science for schools, youth groups and home-educated learners, at Norwich Science Festival's Learning Programme, organised by The Forum.

Our programme engages students with STEMM subjects – science, technology, engineering, maths and medicine – through fun, stimulating workshops and shows.

Join us 15–17 October to explore the science of fireworks, become a DNA detective, create clouds, go on a journey of sound or engage with rap science, in our dedicated Learning Programme to inspire the next generation of scientists.



FREE EXPLORIUM DAYS FOR PRIMARY SCHOOLS

THE EXPLORIUM!

This year, thanks to support from The Forum Trust and Youth STEMM Award, we're able to make both primary Explorium days free to schools.







SCIENCE IN SCHOOLS: OUTREACH EVENTS

Science In Schools

We know it's difficult for some schools to venture out, so we've worked with a variety of the best STEMM providers to bring science to you. Look out for the Science in Schools logo for events that can happen in your school.

For more information on all events, please visit norwichsciencefestival.co.uk/learning. We look forward to meeting you in October!

Sarah Power Learning and Event Manager Lizzie Figura-Drane Learning Events Coordinator

-  norwichsciencefestival.co.uk/learning
-  learning@theforumnorwich.co.uk
-  [#norwichscifest](https://twitter.com/norwichscifest)
-  [norwichscifest](https://twitter.com/norwichscifest)
-  [Norwich Science Festival](https://www.facebook.com/NorwichScienceFestival)
-  [Norwich Science Festival](https://www.instagram.com/NorwichScienceFestival)



Please note that events are correct at time of print, however, details may change. Please check norwichsciencefestival.co.uk/learning for up-to-date information.

HOW TO BOOK / FAQs

HOW DO I BOOK PLACES?

For activities at The Forum, the Fireworks show, home education and youth groups events, simply book via norwichsciencefestival.co.uk/learning. For events happening at partner organisations, or any outreach 'Science in Schools' event, please contact the venue or provider as detailed.

PLEASE BOOK BEFORE THE END OF SUMMER TERM 2018

Many of the events need at least 4 weeks' notice to cancel if places have not been taken up. Be aware this allows only two weeks from the start of the autumn term 2018 to organise your visit.

WHAT HAPPENS NEXT?

From September 2018, all the relevant visit information for events will be downloadable from each event page at norwichsciencefestival.co.uk/learning, including risk assessments, H&S information, and photo / filming permission forms. We would appreciate all photo permission forms are completed and sent to us by 8 October 2018. Please note, by agreeing to visit the Norwich Science Festival you are also agreeing to fill in a short evaluation survey. Evaluation is essential for us to continue to develop and deliver valuable, engaging and exciting opportunities for young learners.

GETTING TO THE NSF LEARNING VENUES

Please see below for venue addresses.

From September 2018, transport / parking / drop-off details for each venue will be available for you to download at norwichsciencefestival.co.uk/learning and share with your transport provider.

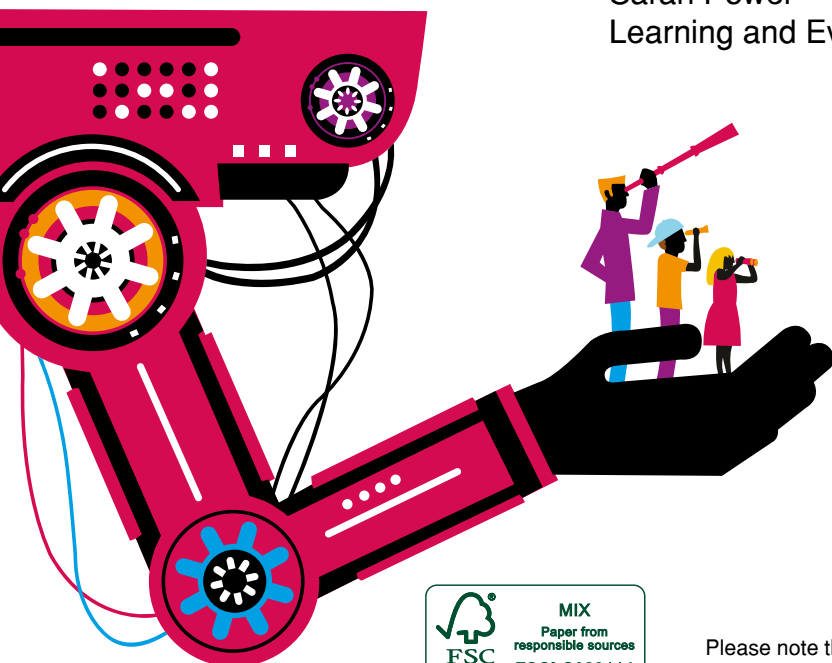
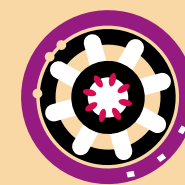
Traffic Management will be operating at OPEN for all those schools and youth groups booked on the Fireworks show on Wednesday 17 October. We ask that drop-off and pick-up guidelines are strictly observed to ensure school and public safety.

VENUES

The Forum
Norfolk Record Office
Norwich Cathedral
University Technical College Norfolk (UTCN)
Sir Isaac Newton Sixth Form
The Kinesis Centre
Sainsbury Centre for Visual Arts (SCVA)
OPEN Norwich

Millennium Plain, Norwich, NR2 1TF
The Archive Centre, Martineau Lane, Norwich, NR1 2DQ
The Close, Norwich, NR1 4DH
Old Hall Road, Norwich, NR4 6FF
30 Bethel Street, Norwich, NR2 1NR
Carrow Road Football Stadium, Norwich, NR1 1JE
University of East Anglia, Norwich, NR4 7TJ
20 Bank Plain, Norwich, NR2 4SF

View venues on Google Maps: bit.ly/NSF2018LearningVenues



AT A GLANCE

PRIMARY

	Reception	KS1	KS2
Explorium Day 1: Mini Professors – Chemical Reactions & Solar System	p6		
Astro Dome	p6		
Explorium Day 2: Cloud Factory / Mini Professors – Digestion and Respiration & Spiders and Butterflies		p7	
Science in a Sacred Space		p8	p8
Rocket Kids		p8	p8
Picture This! Drawing with Light		p9	p9
Mini Monsters		p9	p9
DNA Detectives: To Catch a Thief		p10	p10
Astro Dome			p10
Journey of Sound			p11
Fireworks – Real Science or Just Bangs?			p11
Forage, Make, Paint			p12
STEM Mini Sessions			p12
Fun Forensics at Your Fingertips			p12

SEND SCHOOLS

Fizzing Rocks and Bag Bombs	p13
Astro Dome	p13
Cloud Factory	p13

SECONDARY & SIXTH FORM/COLLEGE

	KS3 Years 7/8	KS4	KS5
Rap Science	p14		
Sequencing in a Suitcase	p14		
OPITO Energy Sector Student Support	p14		
Tomorrow's Engineers Energy Quest	p15		
Fun Forensics at your Fingertips	p15		
Fireworks – Real Science or Just Bangs?	p15		
The Science of Conservation		p16	p16

HOME EDUCATION

	Ages 4–7	Ages 4–11	Ages 7–16	Ages 8+
Explorium Science Squad: Spiders & Butterflies / Cloud Factory	p17			
Mini Monsters		p17		
Fireworks – Real Science or Just Bangs?			p17	
Journey of Sound				p18

YOUTH GROUPS

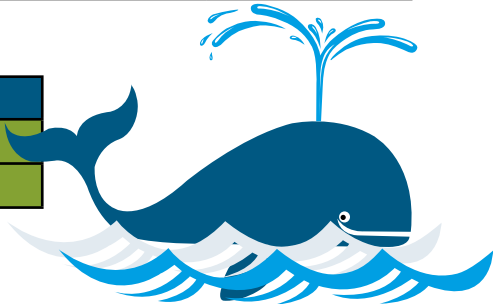
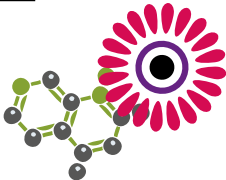
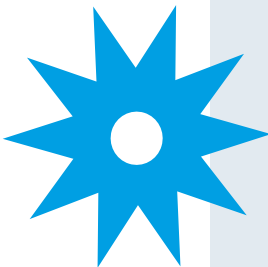
	Fireworks – Real Science or Just Bangs?
Cubs and Brownies	p18
Scouts and Guides	p18

At The Forum

At partner venues

Outreach

Science in Schools



FIREWORKS - REAL SCIENCE OR JUST BANGS?

Wednesday 17 October
OPEN Norwich



Main Event!

Internationally recognised pyrotechnician Matthew Tosh introduces you to his magical and explosive world of pyrotechnic science. He unpicks the building blocks of firework displays to reveal how pyrotechnicians create colours, sound effects and perfectly timed bursts.

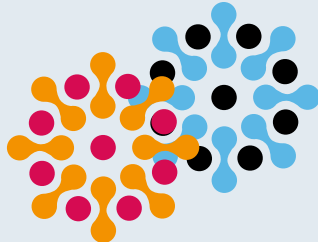
Discover the components that go into making a spectacular live firework display as Matthew demonstrates how science, technology, engineering and mathematics ensure that displays are both accurate and safe for the public.

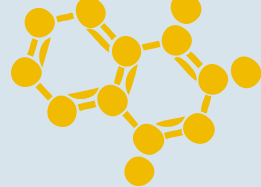
The sights, sounds and smells of fireworks are all brought to life just a few metres from the audience. This is so much more than a show – it is an experience and is guaranteed to thrill.

Matthew is a pyrotechnician, former teacher and TV presenter who has worked behind the scenes of firework displays and live performances for fourteen years.

- KS2:** Wednesday 17 October, 10.30am–11.30am – see p11
- KS3:** Wednesday 17 October, 1.30pm–2.30pm – see p15
- HOME-EDUCATED LEARNERS (7–16):** Wednesday 17 October, 4pm–5pm – see p17
- BROWNIES, GUIDES, CUBS, SCOUTS:** Wednesday 17 October, 7pm–8pm – see p18

More info & book: norwichsciencefestival.co.uk/learning





PRIMARY RECEPTION

THE EXPLORIUM DAY 1 RECEPTION

THE EXPLORIUM!

Monday 15 October
10am–12pm or 12.30pm–2.30pm
The Forum

An exciting session of hands-on science for reception classes – a chance for reception students to turn into Mini Professors! Each school will take part in both Chemical Reactions and Solar System activities.

CHEMICAL REACTIONS

Delve into the intriguing world of how different compounds and elements react together, and find out how they can change into different substances and the fascinating and sometimes fizzy results! Children will be wowed by the instantaneous effects of mixing two chemicals together using a range of household products.

OUR SOLAR SYSTEM

Discover the planets, with Mini Professors' scale model of our solar system, which shows children the size of the planets in relation to each other and the distances between them. The children play an interactive part in recreating this model. Each child will produce their very own constellation card to take home.

Free
More info & book: norwichsciencefestival.co.uk/learning



ASTRO DOME RECEPTION / KSI

Monday 15–Wednesday 17 October
Full day

We can get you into space! With our pop-up planetarium, we can take you on a trip through the Solar System, into the Milky Way, and beyond. We offer complete flexibility for all ages and abilities with interactive sky tours, astro simulations and full-dome films.

£480 for a full day with unlimited shows in your school
Book: creative-space.org.uk/mobile-planetarium/booking-form/



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space**

PRIMARY KSI



THE EXPLORIUM DAY 2 KSI

THE EXPLORIUM!

Tuesday 16 October
10am–2.30pm
The Forum

An exciting day of fun science for KS1 classes. Get hands-on with digestion (urgh!), discover the difference between arachnids and insects, and make your own clouds! Each school will take part in all three activities.

DIGESTION AND RESPIRATION

We look at two vital organ systems in our bodies, how they work, the various parts and how important they are, in this workshop from Mini Professors. Children will be very hands-on, replicating the processes involved in the digestive system (and yes, the end result!) and making a working model lung that can be taken home.

SPIDERS AND BUTTERFLIES

During this workshop from Mini Professors, we look at the difference between arachnids and insects. We use modelling dough to make an ant and a spider, emphasising the differences in the body parts. We then use a Venn diagram to help categorise these differences.



CLOUD FACTORY

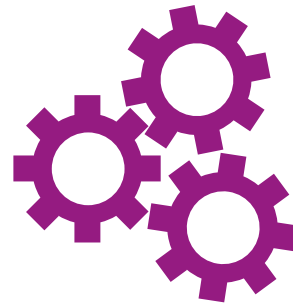
Have you ever touched a cloud? Now you can see, touch, hear, smell and taste one at the Cloud Factory! We'll be working scientifically to explore states of matter in this super-sensory hands-on workshop from Sarah's Adventures in Science.



Credit: Jon Wood & Big Bang Fair

Free
More info & book: norwichsciencefestival.co.uk/learning

PRIMARY KSI / KS2



SCIENCE IN A SACRED SPACE KSI / KS2

Monday 15 October–Wednesday 17 October
Half day 10am–12pm or full day 10am–2pm
Norwich Cathedral

Exciting and challenging science in your Cathedral! Choose your topic from light and sound; forces/ gravity/friction; materials and their properties. There will be lots of RE links too as the students experience their amazing Cathedral. After a short introduction the children will take part in activities, experiments and investigations in our classroom and around the Cathedral.

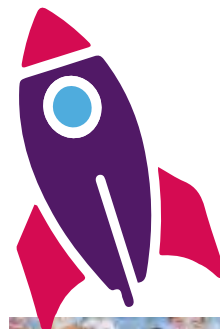


Credit: Paul Hurst

Half day £3.50 or full day £4.50 per student
More info: www.cathedral.org.uk/schools
Book: headofschools@cathedral.org.uk / 01603 218320



ROCKET KIDS KSI / KS2



Monday 15 October–Wednesday 17 October
9am–12pm, 12.30pm–3.30pm

Rocket Kids, driven and delivered by Nick Corston from STEAM.Co, is an aspirational half-day event in school inspired by Homer Hickam's best-selling book and blockbuster movie *Rocket Boys*. Starting with an engaging 40-minute stage show, we shall look at what makes rockets fly. If site, weather and risk assessments allow, the show finale will be to fire a two-stage 'black powder' rocket with parachute recovery system about 500 feet in the air! Then, up to 45 students will participate in an outdoor activity where they will get the chance to make a paper rocket and fire it several hundred feet in the air using air from a bike pump. See the fun in this short film: bit.ly/SCONSWfilm

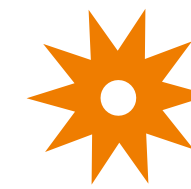


Credit: Gabby Ritchie



£300 per half day – full school assembly + workshop for 45 students
Book: yourturn@steamco.org.uk

PRIMARY KSI / KS2



PICTURE THIS! DRAWING WITH LIGHT KSI / KS2

Monday 15 October–Wednesday 17 October
Full day

Picture this! Experience Ripstop Theatre's new show exploring the art of photography and the pioneering work of female photographer, Olive Edis. After the show, explore and investigate light, dark and the properties of materials. Then focus and apply your knowledge, creating your own 'shadow scape' gallery of interactive pictures.

1 class (up to 30 pupils) £360 + VAT + travel; 2 classes £540 + VAT + travel;
3 classes £720 + VAT + travel
Book: workshops@puppettheatre.co.uk / 01603 615564



MINI MONSTERS KSI / KS2

Monday 15 October
1 hr sessions; up to 5 per school day

Get up close and personal with a selection of (very friendly!) critters, including giant snails, giant millipedes, tarantulas, snakes and lizards! Come along to meet and learn about some fascinating animals and get some hands-on experience!

One session – £85
Two sessions – £150
Three sessions – £210
Four sessions – £260
Five sessions – £300
(plus travel costs at 50p per mile from Norwich city centre)
Sessions accommodate 30 students
Book: info@minimonsters.co.uk



PRIMARY KS1 / KS2

DNA DETECTIVES: TO CATCH A THIEF KS1 / KS2

Monday 15–Wednesday 17 October
1 hour session

Find out what DNA is, where DNA is in our bodies and how big it is. Can we use it to catch a pet thief?

This workshop is based on Dr Mandy Hartley's first children's fiction book *The DNA Detectives – To Catch a Thief* for 7 to 12-year-olds, where the characters in the story use DNA to solve a crime. Children will learn what DNA is, use DNA to find out which pets have been kept in the shed and discover who is the pet thief! They will get a flavour of what it is like to be a real forensic scientist and collect evidence from the crime scene. This interactive workshop is a unique and exciting way to get children interested and excited about literacy and science.

£200 (up to 80 students)
Discounts for 3 or more sessions
Book: TLSTC@outlook.com / 01953 860080

ASTRO DOME KS2

Monday 15–Wednesday 17 October
Full day

If you want a full-on cosmic experience without venturing outside on a cold, dark night, our mobile planetarium is for you! With our pop-up planetarium, we can take you on a trip through the Solar System, into the Milky Way, and beyond. We offer complete flexibility for all ages and abilities with interactive sky tours, astro simulations and full-dome films.

£480 for a full day with unlimited shows
Book: creative-space.org.uk/mobile-planetarium/booking-form/



Science In
Schools



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PRIMARY KS2

JOURNEY OF SOUND KS2 YEARS 5/6

Monday 15 October–Wednesday 17 October
10am–2.30pm
Sir Isaac Newton Sixth Form

Explore a journey into sound with Laboratory Media Education, through a mixture of workshops, mini-lectures and sonic information.

Participants will listen and learn about the ins and outs and ups and downs of sound, noise and music.

Students will rotate between themes such as soundwaves; make a speaker; sound toys; the ear; sonic location and more.

£300 per booking, maximum 35 students
Price subsidised by The Forum Trust
Book: info@laboratorymediaeducation.co.uk



FIREWORKS - REAL SCIENCE OR JUST BANGS? KS2 YEARS 5/6

Wednesday 17 October
10.30am–11.30am
OPEN Norwich

Internationally recognised pyrotechnician Matthew Tosh introduces you to his magical and explosive world of pyrotechnic science. He unpicks the building blocks of firework displays to reveal how pyrotechnicians create colours, sound effects and perfectly timed bursts. For more information, see p5.

£7.50 per pupil; £5 per pupil for 15 or more tickets with discount code FIREWORKS15
More info & book: norwichsciencefestival.co.uk/learning



PRIMARY

KS2

FORAGE, MAKE, PAINT: ART, SCIENCE AND NATURE KS2

Tuesday 16 and Wednesday 17 October
Sainsbury Centre for Visual Arts (SCVA)
10am–12pm, 12.30pm–2.30pm

Make your own natural paint brushes using foraged materials found in the local landscape of the Sainsbury Centre for Visual Arts, before creating painted murals inspired by the environment. Work with multi-disciplinary artists Kaitlin Ferguson and Isabella Martin to discover new connections between art, science and nature.

Prices: £180 per group (30 students) for a half day workshop
Book: scvagroupvisits@uea.ac.uk / 01603 591597

STEM MINI SESSIONS KS2

Monday 15, Tuesday 16 and Wednesday 17 October
9.30am–12pm, 1pm–3.30pm
The Kinesis Centre

The STEM team at Educator Solutions has put together a number of STEM Mini Sessions for schools to get involved with, from robotics to creatures to cranes. Sessions: Predator and Prey via Coding, Jitter Bugs, Robotics Roadshow, STEM Games.

£12 per student (for a half-day mini session)
Book: STEM@educatorsolutions.org.uk / 01603 307715

FUN FORENSICS AT YOUR FINGERTIPS KS2

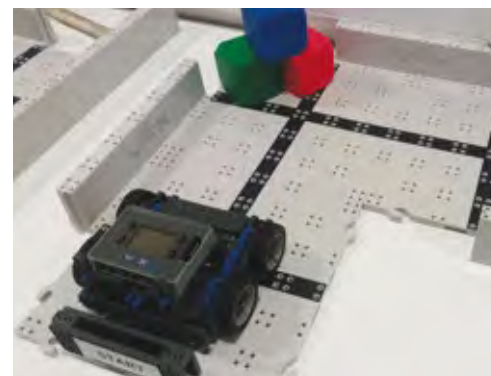
Monday 15 October–Wednesday 17 October

- Fingerprint workshop: learn about fingerprints – why we have them, how they are formed, what we use them for. Powder and lift finger marks and compare them against the suspects' prints.
- CSI day: A crime's been committed – can your students find out who did it? Learn about forensic techniques from a former Scotland Yard fingerprint expert and try to identify the culprit.

More info & prices: norwichsciencefestival.co.uk/learning
Book: diane@forensicminds.co.uk



**SAINSBURY
CENTRE** 40 YEARS
1978–2018

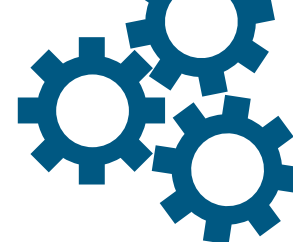


STEM
SCIENCE | TECHNOLOGY | ENGINEERING | MATHEMATICS

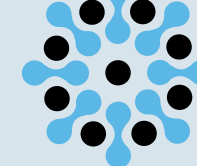
**Science In
Schools**



FORENSIC MINDS



SEND



In 2018 Norwich Science Festival Learning Programme is working with science communicators who specialise in working with students attending SEND schools.

FIZZING ROCKS AND BAG BOMBS

Monday 15 October
Full day

If I give you a special rock...

- Can you make it fizz?
- Can you make it fizz faster?
- Can you make it fizz silently?

We'll be exploring a reaction and then working together to create an explosion! It's a super-sensory exploration of chemistry, developed and tested in SEND schools.

£425 per day
Book: sarah@bearchell.co.uk



**Science In
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THE CLOUD FACTORY

Wednesday 17 October
Full day

Have you ever touched a cloud? Now you can see, touch, hear, smell and taste one at the Cloud Factory! We'll be working scientifically to explore states of matter in this super-sensory hands-on workshop from Sarah's Adventures in Science.

£425 per day
Book: sarah@bearchell.co.uk



Credit: Jon Wood & Big Bang Fair

**Science In
Schools**

ASTRO DOME

Monday 15–Wednesday 17 October
Full day

If you want a full-on cosmic experience without venturing outside on a cold, dark night, our mobile planetarium is for you! With our pop-up planetarium, we can take you on a trip through the Solar System, into the Milky Way, and beyond. We offer complete flexibility for all ages and abilities with interactive sky tours, astro simulations and full-dome films.

£480 for a full day with unlimited shows
Book: creative-space.org.uk/mobile-planetarium/booking-form/



**Science In
Schools**

**creative
space**

SECONDARY KS3



RAP SCIENCE SCIENCE OF FLIGHT & SPACE PHYSICS KS3 YEARS 7/8

Monday 15 October–Wednesday 17 October
Full or half day

Rapping science presenter Jon Chase shows how science is used to achieve flight such as in airships, gliders, planes, helicopters, jets and rockets. Learn all about space and our relationship with it, using raps and demos. What keeps the planets in orbit? What is the Sun? How much do you really weigh?

£450 full day, £250 half day, plus travel within Norfolk
Book: jonchase@hotmail.co.uk

SEQUENCING IN A SUITCASE KS3 YEARS 7/8

Monday 15 October–Wednesday 17 October
9am–3pm (a two-hour session, repeated during the school day)

Students will hear about the latest DNA Sequencing technology used at the Wellcome Genome Campus. They will learn about DNA code, how DNA is sequenced and how this exciting technology is used to solve a range of scientific challenges. They will prepare DNA samples and experience sequencing in action using cutting-edge technology.

Free
Book: engage@wgc.org.uk

OPITO ENERGY SECTOR STUDENT SUPPORT KS3

Monday 15 October–Wednesday 17 October

The OPITO Energy Industry Student Support Programme is FREE and open to secondary schools and colleges, delivered by Beacon East. Sessions include career opportunities in the energy industry, STEM curriculum activities, employability sessions, assemblies and industry days.

Free, more info: norwichsciencefestival.co.uk/learning
Book: info@beacon-east.co.uk

Science In
Schools



RAPSCIENCE

Science In
Schools



WELLCOME
GENOME
CAMPUS

EMBL-EBI

Science In
Schools

BEACON east



SECONDARY KS3



TOMORROW'S ENGINEERS ENERGY QUEST KS3 YEARS 7/8

Monday 15 October–Wednesday 17 October
9.30am–12pm, 1pm–3.30pm
University Technical College Norfolk (UTCN)

Free hands-on STEM activities and careers inspiration. The workshops enable young people to build and test miniature electric cars, investigate global renewable energy technologies and find out about entering The Bright Ideas Challenge national competition.

Free
More info & book: norwichsciencefestival.co.uk/learning



LEARN
by design

Tomorrow's
Engineers

FUN FORENSICS AT YOUR FINGERTIPS KS3 YEARS 7/8

Monday 15 October–Wednesday 17 October

- Fingerprint workshop: Why do we have fingerprints? How are they formed? Powder and lift finger marks and compare them against suspects' prints to identify them.
- CSI day: A crime's been committed – can your students find out who did it? Learn about forensic techniques from a former Scotland Yard fingerprint expert and try to identify the culprit.

More info & prices: norwichsciencefestival.co.uk/learning
Book: diane@forensicminds.co.uk

Science In
Schools



FORENSIC MINDS

FIREWORKS - REAL SCIENCE OR JUST BANGS? KS3 YEARS 7/8

Wednesday 17 October
1.30pm–2.30pm
OPEN Norwich

Internationally recognised pyrotechnician Matthew Tosh introduces you to his magical and explosive world of pyrotechnic science. For more information, see p5.

£7.50 per pupil; £5 per pupil for 15 or more tickets with discount code FIREWORKS15
More info & book: norwichsciencefestival.co.uk/learning



SIXTH FORM / COLLEGE KS4 / KS5

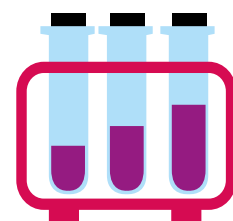
THE SCIENCE OF CONSERVATION KS4 / KS5

Tuesday 16 and Wednesday 17 October
Mornings
Norfolk Record Office

Discover the science behind conservation in this workshop from Norfolk Record Office. Make your own de-acidifying agent and apply this to different papers before testing them to see its effectiveness. Discover how our conservators use this process on our collection. Create your own conservation kit; decide which materials are safe to use on archives, and discover what happens if unsafe materials are used.

The Norfolk Record Office (NRO) collects and preserves unique archives relating to the history of Norfolk and makes them accessible to people in Norfolk and across the world. Our collection includes over 12 million documents, dating from c.1090 to the present day.

Free
Book: norrec@norfolk.gov.uk

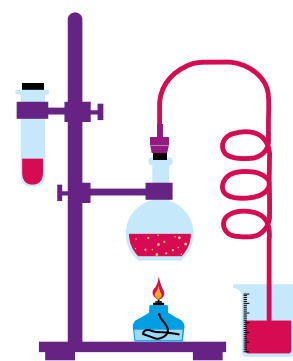
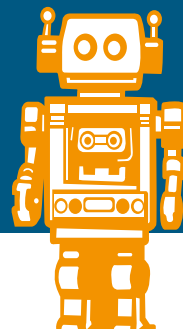


YSA OPPORTUNITIES

The Youth STEMM Award (YSA) provides a focused and engaging framework for young people aged 13-18 to further their passion, knowledge and skills in STEMM (Science, Technology, Engineering, Maths and Medicine).

Find out more about YSA on page 20.

★ YOUTH STEMM AWARD



HOME EDUCATION SESSIONS

EXPLORIUM SCIENCE SQUAD SPIDERS & BUTTERFLIES / THE CLOUD FACTORY AGES 4-7

Tuesday 16 October
3.30pm–5.30pm
The Forum

THE EXPLORIUM!

Become a Mini Professor, and discover the difference between arachnids and insects. Make an ant and a spider, and see the differences in the body parts. Have you ever touched a cloud? Now you can see, touch, hear, smell and taste one at the Cloud Factory!

Free
More info & book: norwichsciencefestival.co.uk/learning

MINI MONSTERS AGES 4-11

Monday 15 October
6pm–7pm
The Forum

Get up close with a selection of (very friendly!) critters, including giant snails, giant millipedes, tarantulas, snakes and lizards! Come along to meet and learn about some fascinating animals and get some hands-on experience!

Free
More info & book: norwichsciencefestival.co.uk/learning

FIREWORKS - REAL SCIENCE OR JUST BANGS? AGES 7-16

Wednesday 17 October
4pm–5pm
OPEN Norwich

Internationally recognised pyrotechnician Matthew Tosh introduces you to his magical and explosive world of pyrotechnic science. See how pyrotechnicians create colours, sound effects and perfectly timed bursts. For more information, see p5.

£7.50 per young learner; up to 2 adults free per booking with discount code FIREWORKSHOME
More info & book: norwichsciencefestival.co.uk/learning



Credit: Jonathan Sanderson



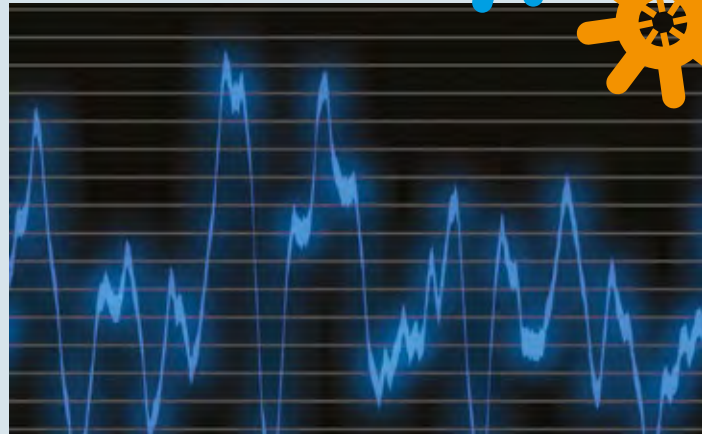
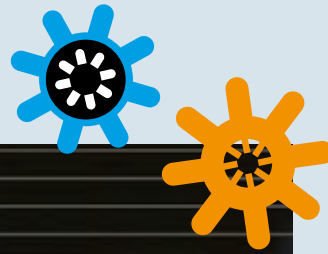
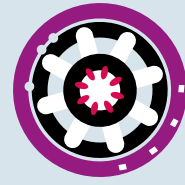
HOME EDUCATION

JOURNEY OF SOUND AGES 8+

Tuesday 16 October
3.30pm–6.30pm
Sir Isaac Newton Sixth Form

Explore a journey into sound with Laboratory Media Education, through a mixture of workshops, mini-lectures and sonic information. Participants will listen and learn about the ins and outs and ups and downs of sound, noise and music. Young learners will rotate between themes such as soundwaves; make a speaker; sound toys; the ear; sonic location and more.

£10 per young learner
Book: info@laboratorymedia.co.uk



YOUTH GROUPS BROWNIES, GUIDES, CUBS, SCOUTS

FIREWORKS - REAL SCIENCE OR JUST BANGS?

Wednesday 17 October
7pm–8pm
OPEN Norwich

Internationally recognised pyrotechnician Matthew Tosh introduces you to his magical and explosive world of pyrotechnic science. He unpicks the building blocks of firework displays to reveal how pyrotechnicians create colours, sound effects and perfectly timed bursts. For more information, see p5.

£7.50 per ticket; £5 per ticket for 15 or more tickets with discount code FIREWORKS15
More info & book: norwichsciencefestival.co.uk/learning



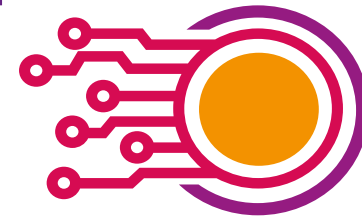
Price includes a limited edition Norwich Science Festival patch badge!



SCIENCE EXTRAS FOR TEACHERS!

UEA SCIENCE EXPLORIUM DAY

We are grateful to the UEA Outreach Team for organising what will be a thrilling day for Upper Key Stage 2 students. Parts of The Forum will be transformed into the Norwich Science Festival Explorium Labs where students will meet scientists from the UEA and enjoy investigating science during specially developed workshops. UEA Outreach will be offering this opportunity to schools across the county so keep an eye on your emails!



NSF TEACHMEET

Friday 12 October, 5pm–7.30pm, The Forum

Teachers across Norfolk are invited to join us at The Forum, Norwich, for a glass of wine or beer, and some pizza! An informal early evening event, full of fun and inspiring ways to teach science. Come along to hear a motivational keynote speaker and share best practice. We are keen to hear from passionate science teachers who want to share a resource, a teaching approach or any great idea during a seven-minute 'Science Slam' slot – to get involved please contact Sarah Power: learning@theforumnorwich.co.uk.

Free, but registration essential: <http://lineupnow.com/event/teachmeet>

CODE CLUB VOLUNTEER TRAINING SESSION

Monday 15 October, 4pm–6pm, Springwood High School, King's Lynn

A special Code Club session in King's Lynn for any adults interested in developing their own Code Club for their school or community. Code Club is a nationwide network of after-school coding clubs for children and young people. All our clubs are led by volunteers and this training is designed to give volunteers all the information they need before they start running a Code Club.

Book, from 1 Sep: <https://www.eventbrite.co.uk/e/code-club-volunteer-training-session-kings-lynn-coding-beginners-tickets-46754888129>



CHILDREN'S UNIVERSITY

Norwich Science Festival supports Norfolk Children's University to provide memorable and high-quality learning experiences designed to inspire and raise aspirations, ambitions and achievements. The Children's University provides all children aged 5–14 years with the opportunity to take part in exciting and creative learning activities outside of the normal school day.
www.norfolk.gov.uk/childrensuniversity



YOUTH STEMM AWARD

A focused framework for young people to further their interest, skills and knowledge in the key fields of Science, Technology, Engineering, Maths and Medicine. Hours towards an Award can be counted from activities such as attending talks at the Norwich Science Festival.

Students log STEMM-related activities on a personalised e-portfolio to evidence participation, commitment and initiative. Work towards an Award through a participating school or at home and receive a medal and certificate upon completion. Sign up for Bronze or Silver if you are 13–19 years, or challenge yourself to go for Gold if you are 16–19 years old. Unlock your potential by signing up to take part today.



Activities in both the Learning Programme (15–17 October) and in the public Norwich Science Festival programme (21–29 October) count towards the YSA, for example attending talks.

YSA Juniors is an exciting new scheme for children in Key Stages 2 and 3 to help develop their excitement, engagement and interest in the wonderful world of STEMM!



Contact YSA to find out more, register your school for the Youth STEMM Award and help students to continue their journey into STEMM:



HQ@ysawards.co.uk



@YouthSTEMM



ysawards.co.uk

Check your dashboard for opportunities!

YSA's new dashboard means it's now easier to find STEMM opportunities for students. Keep an eye out for Norwich Science Festival events, plus additional activities and opportunities to engage with STEMM.

ysawards.co.uk



YOUNG COMMUNICATIONS TEAM

Do your students want to pursue a career in science communication? We have a great free opportunity for young people in Norfolk aged 16–21 to get involved with our Young Communications Team, during the Norwich Science Festival public programme 19–27 October and learning programme 15–17 October. There are many science performances, talks, activities and exhibitions lined up and students will have the chance to train and work with experts.

We are thrilled that the YCT will be working with Concrete – the University of East Anglia's award-winning official student newspaper, BBC Voices and BBC Radio Norfolk, and professional photographer Jeremy Webb. This is a fantastic opportunity for your students to gain valuable experience for university personal statements and their CV.

THE OFFER



The team will receive support and training to enable them to carry out their roles, working closely with The Forum staff and key mentors, to carry out activities connected with the management, delivery, recording and evaluation of NSF events, such as:

- Writing and delivering copy for Concrete online
- Creating and sourcing images for all media
- Contributing to and supporting NSF social media content
- Recording and documenting NSF activities, including making films and recordings for radio broadcasts
- Initiating ideas for NSF future activities
- Reviewing and evaluating NSF events and activities



TEAM MEMBER SPECIFICATIONS

All team members will:

- Have a keen interest in science communication
- Want to contribute to NSF activities and to gain valuable experience
- Be reliable and professional in outlook and behaviour
- Be confident in all aspects of public-facing activity
- Promote NSF and be good ambassadors for its activities and those of its partners and supporters
- Have good communication skills and be confident with appropriate social media use
- Be flexible in approach and attitude especially during the Festival period



Engaging the public

Earn YSA hours!

THE PROCESS

All interested, aged 16–21, should contact learning@theforumnorwich.co.uk for an application form. On the application form, you should explain why you want to be part of the team, how you fit the team member specifications, and if you have any particular experience or interests e.g. in film making or journalism.

All applications to be received by 5pm on Monday 17 September 2018. Following the closing date, applicants will be invited for a casual group event to take place early evening on Friday 28 September, 4pm–6pm, where they will receive further information on roles and schedules.

SPONSORS + PARTNERS

Brought to you by The Forum:



The Forum received funding support for the Norwich Science Festival from:



Learning partners:



Website partner:



Print partner:



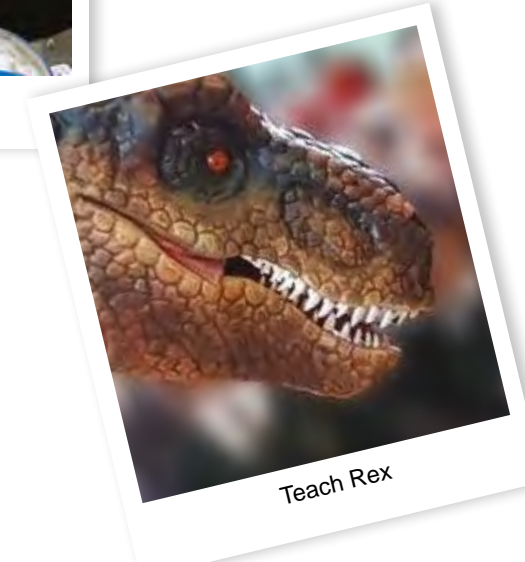
Venue partners:



NORWICH SCIENCE FESTIVAL HIGHLIGHTS 19-27 OCTOBER

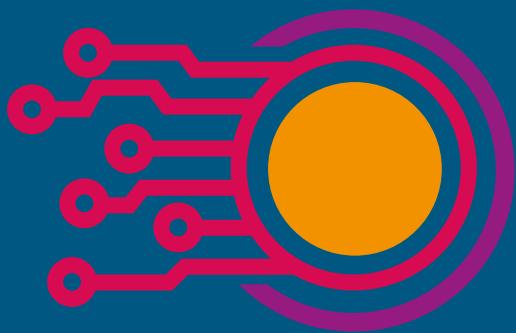
The public programme for #NorwichSciFest takes place in October half-term, with plenty of fun science, talks, shows, workshops and more!

Look out for the NSF18 brochure out at the end of August and keep an eye on norwichsciencefestival.co.uk for the latest events!



JOIN IN THE SCIENCE CHAT!

Share your photos and experiences of both the Learning Programme and the main Norwich Science Festival using #NorwichSciFest, and follow us on our social media channels for all things science!

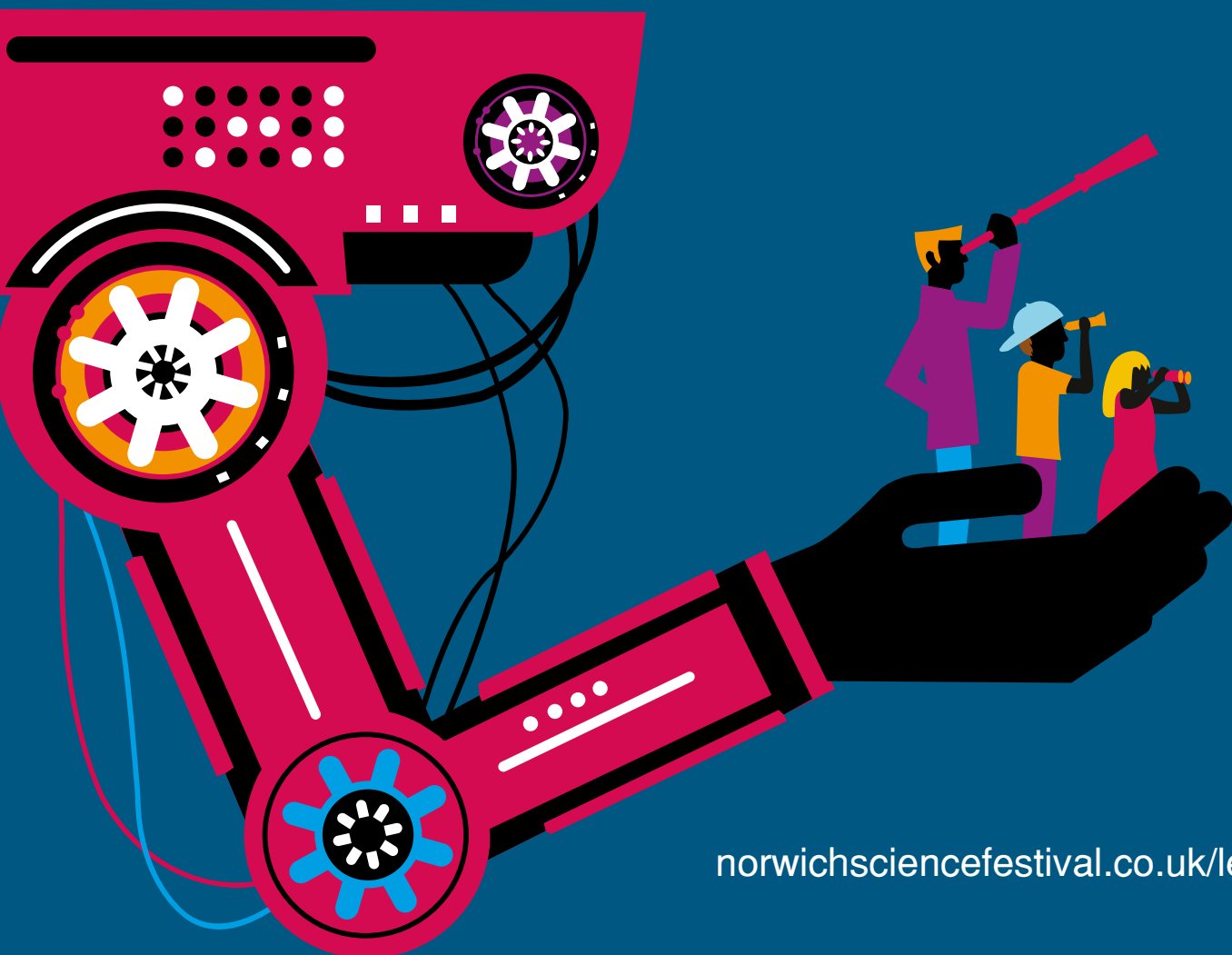


**NORWICH
SCIENCE
FESTIVAL**
19-27 OCTOBER 2018

LEARNING PROGRAMME

Three days of exciting science for schools, youth groups and home-educated learners.

Join us 15–17 October to explore the science of fireworks, become a DNA detective, create clouds, go on a journey of sound or engage with rap science, in our dedicated Learning Programme to inspire the next generation of scientists.



norwichsciencefestival.co.uk/learning