

### BROOKLANDS MUSEUM

### The birthplace of modern innovation

**Brooklands Museum** was a magnet for pioneers, scientists and engineers as they solved some of the greatest challenges of the 20th century, from breaking land speed records to pushing the boundaries of flight. Join our experienced team for an action-packed day of workshops, guided tours, aircraft, buses and automobiles for all ages, from **Early Years** to **Key Stage 4**.

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Our 32-acre site packs in some of the greatest stories of motoring and aviation, from the classic racing cars of the past to state-of-the-art McLaren vehicles; from Bleriot's 1909 cross-channel biplane to supersonic Concorde.

Students can trace the sweeping changes in 20th century technology and engineering through our Motoring Village, Aircraft Park, Factory Square and historic racetrack. They'll learn how these technologies affect how we live our lives today. BROOKLANDS MUSEUM

### A day at Brooklands **Museum includes:**

- FREE teacher pre-visits by arrangement
- FREE adult places to support your students - see ratios on last page. 1:1 carers are free.
- FREE car and coach parking
- An indoor lunch space and dedicated bag storage for your visit
- Experienced staff and volunteers so you get the most from your day
- Collect pre-ordered souvenirs at discount prices



### BESPONEU **Build your** visit to suit your students

On booking you can choose from a range of workshops, tours and museum experiences, building a visit designed to meet learning objectives and a wide range of your student's needs.

A sample visit:

10:00: Arrival and welcome in our Activity Rooms 10:20: Guided Tour: Journeys by Air 11:00: Workshop: Loopy Gliders 12:00: Lunch 12:30 – 13:00: Walkthrough on Concorde 13:00 - 14:00: A visit to the London Bus Museum or the Aircraft Factory 14:10: Depart

We warmly welcome young people with additional needs to Brooklands Museum. Groups with additional needs can book our guided tours and workshops – enguire for pricing for a bespoke day. For a self-guided visit, groups are charged a General Admission fee of £7 for young people under 16, and £10 for young people 16 and over. To discuss individual requirements and make sure your group makes the most out of their visit, please contact our Learning & Engagement team by calling **01932 857381** ext. **275** or by emailing learning@brooklandsmuseum.com

### "We liked the variety and pace of sessions"

Teachers from Kings Oak Primary, New Malden



### Young people with additional needs



www.brooklandsmuseum.com/learning ries: Tel: 01932 857381 ext. 258

### AGES 4-7 YEARS

EARL YEΔR

KEY STAGE

Sensory experience is at the heart of our Early Years and Key Stage 1 offer - young people get to marvel at full-size jet aeroplanes and learn by making and doing.

### **EARLY YEARS**

From penny farthings to motorbikes, from biplanes to jet airliners, Brooklands Museum is a sensory feast for the under-7s. If you'd like to keep your visit simple, try a self-guided visit, without any additional workshops or guided tours, for the cost of our General Admission fee of £7 per head. Workshops and guided tours are an additional cost per class of up to 32 pupils.





**Mini Mechanics** 45 mins / £95 per class

Learning by doing, your class is invited to work with us to make their very own car from craft materials. We'll learn the key parts of a motor car, including tyres, body, and engine, before racing their car to test its design.

EARLY YEARS CURRICULUM LINKS C&L, PS & E, UTW, Mathematics, EAD



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### **KEY STAGE 1**

### SELF-GUIDED VISIT

Explore our Collection of cars, bicycles, aircraft and more in your own time.

If you would like to book a self-guided visit, without any additional workshops or guided tours, your group will be charged a General Admission fee of £7 per head.



**Journeys By Air** 

45 mins / £95 per class

A tour which explores early aircraft, fighter jets, cargo aeroplanes, passenger jets and floatplanes. Teachers can book a walkthrough on Concorde for an additional £40 per class.

**(NATIONAL CURRICULUM LINKS:** History (Significant individuals, Local history) Science (Everyday materials)





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### **Journeys on Land**



45 mins / £95 per class

Journey through our collection of old bicycles, a Penny Farthing, and Formula One racing cars to find out just how varied the materials we use to build land transport can be.

### **(NATIONAL CURRICULUM LINKS:**

History (Significant individuals, Local history) Science (Everyday materials)

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### **Peg Racers**

45 mins / £95 per class

Learn lessons in the tradition of the celebrated innovators at **Brooklands Museum!** Create and test a mini model racing car using simple craft materials, choosing tools and equipment to create something which will race downhill using the power of gravity.

### **NATIONAL CURRICULUM LINKS:**

Science (Forces, Working Scientifically, Everyday Materials) **Design & Technology** 



### WORKSHOP STAGE (1)



### How slow can you go?

### 45 mins / £95 per class

Consider the need to travel slowly: a slow parachute will result in a safe landing. Use a choice of materials or shapes to create a parachute. What better place to test it than the first floor of Barnes Wallis Stratosphere Chamber? Determine which parachute is the most effective through comparisons and measuring time taken to land. This workshop can be differentiated to suit pupils aged 5-14yrs.

### **(NATIONAL CURRICULUM LINKS:**

Science: (Working scientifically, fair testing, forces. Mathematics: problem solving, measure and record time, data handling and statistics)

Design Technology: (Materials and their characteristics: test. evaluate and refine ideas against a specification)



### WORKSHOP

### **Loopy Gliders**

45 mins / £95 per class

Why does an aeroplane stay in the air? In this engaging learning-by-doing session, your class takes part in a discussion about the key principles of flight – including lift, drag, thrust, and gravity – whilst building their own paper flying craft.

### **(W)** NATIONAL CURRICULUM LINKS:

Science (Forces, Working Scientifically, Everyday Materials) Design & Technology



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### AGES 8-10 YEARS

KEY STAGE

Brooklands is the perfect place for your **Key Stage 2** students to broaden their scientific view of the world. Around every corner is an opportunity to explore science, technology, engineering or mathematics.



From penny farthings to motorbikes, from biplanes to jet airplanes, Brooklands Museum is packed with opportunities to broaden your class's scientific and technological knowledge and help them develop ideas. If you'd like to keep your visit simple, try a self-guided visit, without any additional workshops or guided tours, for the cost of our General Admission fee of £7 per head. Workshops and guided tours are an additional cost per pupil.



urther information: <u>www.brooklandsmuseum.com/learning</u>

ookings and Enquiries: Tel: 01932 857381 ext. 258

Or email: <u>learning@brooklandsmuseum.com</u>



### **Automotive Innovations**

45 mins / £95 per class

Trace the lessons learned by our pioneers at Brooklands Museum and others like them, as they perfected bicycle and car designs to work with forces like friction, air resistance and gravity in the search for safety, stability and speed.

### **NATIONAL CURRICULUM LINKS:**

Science (Forces, Levers Pulleys & Gears)

History (Local history)

### TOUR

### **Aviation Innovations** 45 mins / £95 per class

Learn about man's battle to master the challenges of air resistance, friction and gravity in this guided tour of some of Brooklands Museum's most memorable aeroplanes. Walk through a Wellington Bomber fuselage, explore our collection of fighter jets from the First and Second World Wars, and discover Barnes Wallis' Stratosphere Chamber.

Teachers can book a walk through on Concorde for an additional £40 per class.

**(NATIONAL CURRICULUM LINKS:** 

Science (Forces, Gravity, Levers Pulleys & Gears) Historv (Local history)



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### **Pulleys, Levers & Gears**

### 45 mins / £95 per class

In this hands-on, engaging workshop, learn about three mechanisms used in engineering: pulleys, levers and gears. Discover how these mechanisms use forces, situations where they might be used, and how they can make life easier for everyone!

### **NATIONAL CURRICULUM LINKS:**

Science: (Forces including gravity, mechanisms, working scientifically)

Mathematics: (Measure and compare lengths and masses)

Design & technology: (Mechanical systems, investigate existing products)

### **COLLECTION HANDLING** WORKSHOP

### WW2: Life on the **Brooklands' Home Front**

5 mins / £95 per class

Every object tells a story: our experienced facilitator takes you on a journey through the stories of people living around Brooklands during the Second World War using original artefacts

**NATIONAL CURRICULUM LINKS:** History (Local history)



### WORKSHOP

### **Downhill Racers**

45 mins / £95 per class

Harness one of our key forces here on this planet – gravity – to create the energy for your own racing car made from recycled materials! Join your class in this learning-bydoing workshop, to discover the challenges of acceleration on a downhill slope.

### **NATIONAL CURRICULUM LINKS:**

Science (Forces, Working scientifically) Design & Technology



### WORKSHOP

### How slow can you go?

45 mins / £95 per class

Consider the need to travel slowly: a slow parachute will result in a safe landing. Use a choice of materials or shapes to create a parachute. What better place to test it than the first floor of Barnes Wallis Stratosphere Chamber? Determine which parachute is the most effective through comparisons and measuring time taken to land. This workshop can be differentiated to suit pupils aged 5-14yrs.





Science: (Working scientifically, fair testing, forces. Mathematics: problem solving, measure and record time, data handling and statistics)

Design Technology: (Materials and their characteristics; test, evaluate and refine ideas against a specification)



" The Downhill Racers workshop ties in brilliantly with design and technology work at school. Both testing for them and very entertaining."

Teachers at St Neot's Preparatory School, Hook



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## KEY STAGE

### AGES 11-16 YEARS

From the wide array of materials used in our cars and planes, to the invisible forces that govern speed, we have something to get Key Stage 3 and 4 students asking questions.

### Gatsby Benchmarks

We support the Gatsby benchmark framework and currently offer workshops which support benchmark 3: linking curriculum learning to careers.





<sup>=</sup>urther inform ation: <u>www.brooklandsmuseum.com/learning</u> Enquiries: Tel: 01932 857381 ext. 258

Get a British Science Association **CREST** award with Brooklands Museum.

The CREST Awards scheme is the British Science Association's (BSA) flagship programme for young people, providing science enrichment activities to inspire and engage 5-to-19-year-olds.



offer a bronze accredited CREST award that sees students design and build aerodynamic shells, mounted onto RC cars to be raced down our historical finishing straight. This project uses design ideas of the past to inspire students to create cars they can put to the test on the Brooklands Museum historic racetrack.

For further information and pricing, please contact the Learning & Engagement team at learning@brooklandsmuseum.com

SELF-GUIDED VISIT STAGE 3 STAGE 4

At Brooklands Museum there's plenty of scope for your KS3 and KS4 students to learn how engineers and scientists grappled with some of the big scientific ideas behind aircraft, buses and cars, modifying their approach and learning from their mistakes. If you would like to book a self-guided visit, without any additional workshops or guided tours, your group will be charged a General Admission fee of £7 per head for pupils under 16, and £10 per head for pupils 16 and over. Workshops and guided tours are an additional cost per pupil.

### "We loved it. The volunteers were fantastic and the students really had a great time"

Salesian College. Farnborough





Here at Brooklands Museum, we REFE WEETEN

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### Aeronautics and Automotive Technology

60 mins / £95 per class

Learn about the big ideas behind some of the pioneering achievements at Brooklands Museum – aerodynamic principles, motion and forces - as students explore key stories from our Aviation and Motoring exhibitions. Teachers can book a walk through on Concorde for an additional £40 per class.

### **NATIONAL CURRICULUM LINKS:**

Science History (Motion, Forces, Energy) (Local history)

### **Propeller Racers**

60 mins / £130 per class

Construct a model car for the future powered by electricity! In this learningby-doing workshop, students construct a car to a budget, creating a circuit to power their car's propeller.



### **(NATIONAL CURRICULUM LINKS:**

Science (Physics, Forces, Circuits) **Design & Technology** 

### WORKSHOP KEY (3)

### How slow can you go?

### 45 mins / £95 per class

Consider the need to travel slowly: a slow parachute will result in a safe landing. Use a choice of materials or shapes to create a parachute. What better place to test it than the first floor of Barnes Wallis Stratosphere Chamber? Determine which parachute is the most effective through comparisons and measuring time taken to land. This workshop can be differentiated to suit pupils aged 5-14yrs.

### **(NATIONAL CURRICULUM LINKS:**

Science: (Working scientifically, fair testing, forces. Mathematics: problem solving, measure and record time, data handling and statistics)

Design Technology: (Materials and their characteristics: test. evaluate and refine ideas against a specification)



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### **Supersonic Numbers**

### 60 mins / £130 per class

Did you know that calculations for supersonic passenger flight were done here at Brooklands? Learn about the work of Brooklands-based mathematician Joanna Weber. Create and fly paper aeroplane, then calculate its maximum theoretical speed using Weber's innovative mathematics. This workshop includes a Concorde walkthrough.



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### **NATIONAL CURRICULUM LINKS:**

Science: (Forces, describing motion. Mathematics: (Model situations, algebraic notation, trigonometry)

### TOUR STAGE 3 STAGE 4

### **Concorde Experience**

35 mins / £3.50 per pupil and £7 per accompanying adult

Take the Brooklands Museum Concorde Experience and see inside the world's most famous aircraft. Learn about the challenges of creating a supersonic airliner and the journey towards reaching Mach 2, twice the speed of sound, in this fascinating tour through the aircraft.

### **College visits**

### to Brooklands -**Guided Tours**

CONVERSIT UNIVERSIT At Brooklands Museum we offer bespoke guided tours for colleges and universities. Topics include automotive design and engineering, aerospace, travel, business and tourism studies, fine art, and collection conservation.

For a self-guided visit, college and university groups will be charged a General Admission fee of £7 per head for pupils under 16, and £10 per head for pupils 16 and over. Please contact our Learning & Engagement team to discuss your requirements at learning@brooklandsmuseum.com or 01932 857381 ext. 258.



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EDUCATORS



Intor ation: <u>www.brooklandsmuseum.com/learning</u>

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Or email: <a href="mailto:learning@brooklandsmuseum.com">learning@brooklandsmuseum.com</a>

### Home Educators

Home Educators are warmly welcomed to Brooklands Museum during termtime (excluding school holidays and weekends). You will need a group of at least 15 schoolaged children and a ratio of 1 adult (free of charge) to 5 children applies.

Additional children under 5 years old attending with a Home Educator are admitted free but incur our standard charge for any guided tours or workshops.



**Brooklands Innovation Academy is an annual** programme that inspires and supports young people to become the next generation of scientists and engineers, helping make Britain the best place in the world to do science.

Delivered by Brooklands Museum at its historic site, renowned for innovation and world firsts, in engineering and design, Brooklands Innovation Academy brings together secondary school students with the best of STEM expertise (Science, Technology, Engineering and Maths). Talented scientists and engineers will inspire future generations through talks, seminars, discussions, workplace experience and hands on workshops.

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## BROOKLANDS

SCIENCE & ENGINEERING

Brooklands Innovation Academy is part of the National Summer School programme, co-founded by Professor Brian Cox CBE, Lord Andrew Mawson OBE and Well North Enterprises. In Surrey, it is presented by Brooklands Museum and delivered in partnership with Bourne Education Trust and supported by Haleon and other leading businesses and donors. Professor Cox will host the inspirational key event at Brooklands Museum later this year, which will be attended by 400 secondary school students.

To find how your school can be involved in this exciting programme, contact Brooklands Learning Team on learning@brooklandsmuseum.com, or visit Brooklands Innovation Academy (brooklandsmuseum.com) for further information.





er intorn ation: <u>www.brooklandsmuseum.com/learning</u>

Bookings đ **Enquiries:** Tel: 01932 857381 ext. 258

Or email: <u>learning@brooklandsmuseum.com</u>

### ADULT SUPERVISORS

We ask that school groups bring appropriate adult supervision with a minimum of two adults. Our adult to child ratios are: Early Years and KS1 are 1:5. KS2 is 1:7 and KS3/KS4/Post 16 is 1:10.

Extra supervising adults will be charged Admission to the Museum. Admission is £19.50 per adult supervisor.

### ON YOUR DISCOVERY DAY...

We recommend allocating 4 hours for your educational visit to Brooklands Museum. Schools can arrive when the Museum opens at 10:00am and typically depart between 1:30pm-2:30pm. Each school is greeted by a member of staff or volunteer at the main entrance.

A pre-visit information pack, including your visit timetable, will be sent to you a fortnight before your visit.

and eat packed lunches.

If you would like to visit with a group of more than 120 pupils, please contact the Learning & Engagement team by calling 01932 857381 ext. 258 or by emailing learning@brooklandsmuseum.com

Workshops and guided tours are charged per class (up to 32 pupils). For groups of less than 15, please contact the Learning & Engagement team for bespoke charges.

### PARKING

free entry to the Museum.

### PAYMENT AND CANCELLATION

Your school will be invoiced when the booking is made. The booking is secured by a non-refundable 10% deposit and the balance payable 14 days prior to the date of the visit. Schools can amend the number of pupils and adults prior to settling the full payment. After this, no reductions to numbers can be made.

Cancellations made less than 14 days prior to your visit will incur a cancellation fee of 50% of the educational visit cost quoted in your booking confirmation. Cancellations made less than 5 days prior to your visit will incur a cancellation fee of 75% of the educational visit cost. Cancellations must be made in writing to learning@brooklandsmuseum.com

### HOW TO BOOK

If you're ready to make your booking you can fill in the request to book an educational visit form on our website at brooklandsmuseum.com A member of our team will then contact you to confirm your visit.

For additional information or to chat about your visit, contact our Learning & Engagement Officer by calling 01932 857381 ext. 258 or by emailing learning@brooklandsmuseum.com

**Planning ahead** – Planning visits and risk assessments

Our full schools' Risk Assessment will be provided upon booking.

Book a complimentary pre-visit to Brooklands Museum during opening hours, during which you can complete a school-specific Risk Assessment.

You can book one of our Activity Rooms free of charge as part of your visit. Rooms are allocated to you for the day and can be used to store bags

### **GROUP SIZES AND CAPACITY**

Coaches can park for free in our Main Visitor carpark. Coach drivers receive