

**SATURDAY 04 SEPTEMBER 2021****SAT 19:00 Treasures of Ancient Egypt (p01mv1cv)**  
The Golden Age

On a journey through Ancient Egyptian art, Alastair Sooke picks treasures from its most opulent and glittering moment. Starting with troubling psychological portraits of tyrant King Senwosret III and ending with the golden mask of boy king Tutankhamun, Sooke also explores architectural wonders, exquisite tombs and a lost city - site of the greatest artistic revolution in Egypt's history where a new sinuous style was born under King Akhenaten and Queen Nefertiti. Along the way Egyptologists and artists reveal that the golden veneer conceals a touching humanity.

**SAT 20:00 Our Coast (m000frj7)**  
Series 1

Dumfries and Galloway/South Ayrshire

This episode explores the south western coastline of Scotland's gateway to the Irish Sea. Mehreen takes to the skies with the former RAF fighter pilot who is now using his flying skills to document the large-scale pollution that is hidden along the coastline.

Meanwhile, Adrian visits the beautiful harbour of Portpatrick to meet the local hero who persuaded his community to buy shares in the town's harbour, revitalising it for all who live there.

Other highlights include engineer Danielle George being given a rare opportunity to get hands on in one of the UK's major air traffic control centres in Prestwick. Wildlife expert Patrick Aryee joins local volunteers to help to track rare birdlife on the stunning Ailsa Craig, and cultural connoisseur Joe Lindsay visits a renowned artists' colony that is also the setting for The Wicker Man. Finally, Adrian and Mehreen find out the secrets of cold smoking Scottish salmon.

**SAT 21:00 The Hunt for a Killer (p09lx0k6)**  
Series 1

Episode 1

Ten-year-old Helén Nilsson disappears at Easter 1989 from the small community of Hörby. Her body is found six days later. Detective Pelle Åkesson is disappointed when the case is given to an inexperienced colleague and accurately predicts that they will be swamped by trivial details when tips start pouring into the police station.

Five months later, the naked body of a 26-year-old woman is found in a lay-by. Can both crimes have been committed by the same person?

In Swedish with English subtitles.

**SAT 21:45 The Hunt for a Killer (p09lx0mb)**  
Series 1

Episode 2

In the autumn of 1995, six years after the murder of ten-year-old Helén Nilsson, Åkesson and his team of detectives in Kristianstad learn of another body dumped very close to their police headquarters.

In Swedish with English subtitles.

**SAT 22:30 Storyville (b084fs2p)**  
The Cult That Stole Children - Inside the Family

An incendiary, heartbreaking investigation into one of Australia's most notorious cults, and the scars its survivors still bear today.

Anne Hamilton-Byrne was beautiful, charismatic, delusional and damaged. She was also incredibly dangerous. Convinced she was a living god, Hamilton-Byrne headed an apocalyptic sect dubbed The Family, which was prominent in Melbourne through the 60s and 70s. With her husband Bill, she acquired numerous children - some through adoption scams, some born to cult members - and raised them as her own. Isolated from the outside world, the children were dressed in matching outfits, had identically dyed blonde hair, and were allegedly beaten, starved and injected with LSD. Taught that Hamilton-Byrne was both their mother and the messiah, the children were eventually rescued during a police raid in the mid 80s, but their trauma had only just begun.

**SAT 23:30 Twin Sisters: A World Apart (b053pxdt)**  
Documentary telling the poignant true story of twin sisters from China, found as babies in a cardboard box in 2003 and adopted

by two separate sets of parents - one from California, the other from a remote fishing village in Norway.

In the US, Mia is raised a typical all-American girl, with a bustling life filled with violin lessons, girl scouts and soccer, while Alexandra grows up in the quietude of the breathtakingly beautiful but isolated village of Fresvik, Norway.

Neither of the adoptive parents were told their daughters were twins, but a chance sighting at the orphanage enabled them to keep in touch, until a DNA test proved their hunch had been right. Both girls grew up knowing they had an identical twin living on the other side of the world.

The film tells the remarkable story of their parallel journey, punctuated by only the odd visit, videos and photographs - until they meet for a longer visit in Norway when they are eight years old. Despite living completely different lives and speaking different languages, they are mirrors of each other - the magical bond between them is extraordinary.

This is the story of our notions of family - the genetic ones we inherit and the ones we create.

**SAT 00:30 Treasures of Ancient Egypt (p01mv1cv)**  
[Repeat of broadcast at 19:00 today]**SAT 01:30 Our Coast (m000frj7)**  
[Repeat of broadcast at 20:00 today]**SAT 02:30 Earth's Great Rivers (b0bwqng8)**  
Series 1

Nile

For a river that conjures up images of pyramids and pharaohs, the Nile turns out to be a truly surprising river that changes at every twist and turn of its journey. As its flows into increasingly arid latitudes on its journey north it becomes an evermore vital lifeline for animals and people, but only if they can conquer the challenges that this ever-changing river throws at them. The Nile's story begins in a spectacular, tropical mountain range - the Rwenzoris. Streams plunge from these snowy peaks creating wetlands on the plains below. Here they create a mobile water garden of papyrus reeds, home to one of the world's strangest birds - a shoebill stork. Though beautiful, clumps of reeds break up and float around creating a challenging environment for would-be fishermen. A stork's best way of finding prey is to form a rather strange alliance - wily shoebills follow hippos whose great bulk opens up fishing channels for them.

The Nile's headwaters create huge lakes in the equatorial heart of Africa - everything here is on a vast scale, especially Lake Victoria which is the size of Ireland. Here vast swarms of lakeflies sweep across its waters on a biblical scale, providing an unexpected feast for local people who trap the insects to make 'fly burgers'. It is not just Lake Victoria's immense size which makes it so dramatic. The vast lake has only a single exit channel of ferocious white water - the aptly named White Nile. People come from around the globe to tackle the rapids here which are some of the most powerful and infamous in the world. A local heroine, Amina Tayona (a mum from a nearby village) is brave enough to ride them. Amina has learnt to kayak on these treacherous rapids - and now competes against international athletes.

The next stage of the Nile's great journey are the wild Savannah lands of Uganda and the awesome spectacle of one the world's most powerful waterfalls, Murchison Falls. Here, valiant crocodile mothers try to defend their nest against hungry predators. Even though they are such fearsome predators - crocodiles have a weakness which other animals exploit. Watch as cunning Nile monitor lizards try to outwit an increasingly desperate Nile crocodile mother who faces a terrible dilemma. Further downstream is the setting for one of the episode's most surprising stories. Filmed for the first time using the latest camera-trap technology, cameras reveal strange goings-on at the abandoned country home of infamous and exiled dictator, Idi Amin. Its ruins are attracting new, wild guests. Many of Africa's big predators make their home here today.

In South Sudan, the Nile river slows and spreads out transforming into a huge wetland - the Sudd (Arabic for barrier). Half of its water is lost due to evaporation here and this is before the river embarks on its epic crossing of the Sahara - a desert the size of China. Every year, the dwindling Nile receives a massive, timely injection of water far to the east. In the Ethiopian highlands, the Nile's greatest tributary - the Blue Nile - is swelled by the wet season creating some of the most turbulent and dramatic seasonal waterfalls on Earth and forming a spectacular gorge which is nearly as deep as the Grand Canyon.

The Blue Nile is a river revered and used in a variety of incredible ways - from mass baptism ceremonies in the ancient Ethiopian city of Gondar to colonies of cheeky weaver birds

who use the riverbank's reeds to build intricate nests. The Blue Nile replenishes the main Nile channel at the Sudanese capital city of Khartoum, the two become one and embark on the epic crossing of the Sahara. The miracle of the Nile is that it has allowed great civilisations to thrive in a desolate and arid region - today and throughout history. From the exotic city of Cairo, to the glories of ancient Egypt, breathtaking photography reveals the extent of the Nile's power to transport water from one part of world and deliver it to another, building and supporting life.

**SUNDAY 05 SEPTEMBER 2021****SUN 19:00 BBC Proms (m000zgdw)**  
2021

John Eliot Gardiner and the English Baroque Soloists

Marking his sixtieth appearance at the Proms, Sir John Eliot Gardiner directs the Monteverdi Choir and the English Baroque Soloists in a celebration of the early works of Handel and Bach.

Mezzo-soprano Ann Hallenberg is the soloist in Handel's cantata of praise to the Virgin Mary, Donna, che in ciel, which is followed by Bach's Easter cantata Christ lag in Todes Banden. The Prom culminates in Handel's vividly theatrical Dixit Dominus. Presented by Petroc Trelawny from the Royal Albert Hall.

**SUN 21:00 Vivaldi Unmasked (m000zgdg)**

Charles Hazlewood travels to Venice to uncover the life story of composer Antonio Vivaldi.

**SUN 22:00 Pompeii: The Mystery of the People Frozen in Time (b01rn6c2)**

The city of Pompeii uniquely captures the public's imagination - in AD79 a legendary volcanic disaster left its citizens preserved in ashes to this very day. Yet no-one has been able to unravel the full story that is at the heart of our fascination - how did those bodies become frozen in time?

For the first time, the BBC has been granted unique access to these strange, ghost-like body casts that populate the ruins and, using the latest forensic technology, the chance to peer beneath the surface of the plaster in order to rebuild the faces of two of the people who were killed in this terrible tragedy.

Margaret Mountford turns detective to tell a new story at the heart of one of history's most iconic moments, as she looks at the unique set of circumstances that led to the remarkable preservation of the people of Pompeii. By applying modern-day forensic analysis to this age-old mystery, Margaret dispels the myths surrounding the events in AD79. She also explores the lives of the individuals who once lived in this vibrant and enigmatic city and recreates the last moments of the people caught up in this tragedy.

**SUN 23:00 Unlocking Nature's Secrets: The Serengeti Rules (m000b8p4)**

One of the most important yet untold science stories of our time, a tale with profound implications for the fate of life on our planet.

Beginning in the 1960s, a small band of young scientists headed out into the wilderness, driven by an insatiable curiosity about how nature works. Immersed in some of the most remote and spectacular places on earth - from the majestic Serengeti to the Amazon jungle, from the Arctic Ocean to Pacific tide pools - they discovered a single set of rules that govern all life.

Now in the twilight of their eminent careers, these five unsung heroes of modern ecology share the stories of their adventures, reveal how their pioneering work flipped our view of nature of its head and give us a chance to reimagine the world as it could and should be.

**SUN 00:20 Secret Knowledge (b03jryyp)**  
Castiglione - Rogue Genius of the Baroque

One of the most innovative artists of the 17th century, printmaker and draftsman Giovanni Benedetto Castiglione was also a violent, impetuous man, repeatedly in court for assault and even accused of murder. His turbulent life often overshadowed his artistic brilliance, and Castiglione struggled to achieve recognition in his own lifetime.

Yet his pioneering printmaking techniques would influence generations of later artists including Degas and Picasso and with the UK's first major exhibition of his work currently running at the Queen's Gallery in Buckingham Palace, art historian Helen Rosslyn makes the case for Castiglione to be seen as one of the great artists of the Baroque.

Featuring exclusive access to Castiglione's original prints and

drawings in the library at Windsor Castle, uncovering documents that throw new light on his troubled personality and revealing fascinating insights into his ground-breaking printmaking methods, Helen tells the story of one of the forgotten geniuses of art history.

**SUN 00:50 BBC Proms (b07rkvp4)**  
2016

BBC Proms Encores: Schubert Rondo

From the 2016 BBC Proms, Martha Argerich performs Schubert's Rondo in A.

**SUN 01:05 Vivaldi Unmasked (m000zgy)**  
[Repeat of broadcast at 21:00 today]

**SUN 02:05 Pompeii: The Mystery of the People Frozen in Time (b01rn6c2)**  
[Repeat of broadcast at 22:00 today]

**MONDAY 06 SEPTEMBER 2021**

**MON 19:00 Great British Railway Journeys (b0915kf0)**  
Series 9

Cromer to Cambridge

Michael Portillo fast tracks to the early 20th century to embark on a new series of railway journeys through Edwardian Britain. His 'new' guide book, published over a hundred years ago, unlocks Britain's railways at their zenith, when some 20,000 miles of track reached into every corner of the country. Michael navigates a vibrant and optimistic Britain, at the height of its power and influence in the world, but a nation wrestling with political, social and industrial unrest at home.

His first journey follows in the footsteps of the new monarch for the new century, King Edward VII, from the grand estates of Norfolk to a bivouac on Brownsea Island. In this first episode, Michael takes a pot shot at the sport of kings at a country estate, where the king dallied with his mistress. He learns the ropes aboard an Edwardian wherry on the Norfolk Broads and joins variety performers to tap dance on Cromer Pier. In Cambridge, he investigates the student days of the young Prince of Wales and the novelist EM Forster, author of Howard's End.

**MON 19:30 The Joy of Painting (m000zcg9)**  
Series 4

Graceful Waterfall

Travel deep into the forest with Bob Ross and discover the beauty and serenity of an elegant waterfall.

**MON 20:00 Secrets of the Museum (m000f1xp)**  
Series 1

Episode 1

Inside every museum is a hidden world, and now, cameras have been allowed behind the scenes at the world-famous Victoria and Albert Museum in London.

Only a small part of the two million wonders in the collection are on display to the public. But in this new series we go behind closed doors to explore all the treasures of art, design and performance the museum has to offer.

We follow experts and conservators at work in this treasure trove of the nation's favourite objects, as they breathe new life into fragile marvels, uncover hidden stories, and battle to keep the past alive.

In this week's episode we follow the charming story of a handmade children's toy - Pumpie the elephant. Pumpie was made a hundred years ago by the Cattle family in west London. The children whose beloved stuffed toy he was made special outfits for him, painted his portrait, and took him with them on holiday. But Pumpie has suffered major moth damage over the years, and now needs urgent restoration.

Curator Will takes the treasured toy to head textile conservator Jo, who dyes new felt to patch up Pumpie's moth-eaten trunk, darns his miniature admiral's outfit and restores his original brass buttons so that he's shipshape to go out on loan for a special exhibition.

But before Pumpie packs his trunk, a relative of the family who once owned him is invited into the conservation workshop to meet him for the first time.

Meanwhile curator Charlotte is on the case of a missing woman. The face of a beautiful 18th-century aristocrat has been meticulously painted in enamel on an ornate gold and enamel snuffbox. But nobody knows for certain who this mysterious woman might be.

Charlotte is determined to get to the bottom of this question with a visit to historic Ham House. She compares large-scale portraits and other miniatures with the snuffbox to establish the identity of Lady Frances Carteret.

Behind the scenes of the spectacular Christian Dior exhibition, we uncover the expert skill involved in creating bespoke mannequins to display the gowns. Each mannequin is sculpted by textile conservators Lillia and Lara to exactly fit the dimensions of each dress's original owners. Pamela Mann, the original owner of a spectacular raspberry-pink cocktail dress, comes in to the Museum to see the results of the team's labours, and tells us the story of how her husband - a former physician to the Royal Household - bought Pamela the dress from Harrods in the 1950s.

In the performance galleries, rock and pop curator Vicky and conservator Susana take us inside Kylie Minogue's dressing room, which is on display as a time capsule of the star's 2007 tour. As they check the condition of the dresses, shoes and make-up, we discover the significance of the objects from this moment in Kylie's life - after her treatment for breast cancer. Finally, paper conservator Anne gets to grips with a colourful Victorian curiosity called a paper peep-show. This folding paper marvel was made as a souvenir of the Great Exhibition in 1851, and is made up of a series of hand-painted cardboard plates that magically open like an accordion.

But the 170-year-old paper object is so delicate that it's in danger of falling apart. We follow the careful surgery required, using tiny pieces of Japanese paper and wheat starch to restore the beautiful piece so that visitors will be able to take a peep into the past and see the Great Exhibition for themselves.

**MON 21:00 Maggi Hambling: Making Love with the Paint (m000nx23)**

In a definitive and moving film to mark her 75th birthday, artist and national treasure Maggi Hambling tells her story while working on a mysterious black canvas.

Famously scary and a free spirit, Hambling is celebrated for her intensely moving portraits - the blind boxer Charlie Abrew, the lonely clown Max Wall - her Wave painting and Scallop, her signature sculpture on Aldeburgh beach, commemorating Benjamin Britten.

Maggi is both a comic extrovert and an intensely private artist, seen parading in a feather boa and fish nets or on television sporting a moustache. But now she mostly prefers the rural Suffolk of her childhood. It is here, for the first time, she has allowed cameras access to her studio, talking candidly to filmmaker Randall Wright during breaks from work. Others offer their insights - her partner and fellow artist Tory Lawrence and much-loved friends, including art writer James Cahill and renowned artist Sarah Lucas.

As her trust in the documentary project grows, Maggi reveals her recent Laugh paintings, exploring her fascination with an expression that seems on the edge of tears. So much of her work finds beauty that is both poignant and unsettling. Her much-admired wave paintings have the majesty and restorative power of nature and yet threaten. Maggi's major work War Requiem, inspired by Britten, presents the violence of war as terror-inspiring and awesome. Now she confronts man-made environmental disaster in the same tragic mode - her love for animals mediated by the shock that their beauty may not prevent extinction.

Finally, Maggi Hambling completes her new painting on a black canvas. Without giving too much away, the powerful image reveals a formative childhood memory. At 75, Maggi, in a morose mood, sometimes wonders at the futility of life, but she still battles every day to immortalise the memory of love.

**MON 22:00 The Art of Japanese Life (b08v8gxj)**

Series 1

Nature

Dr James Fox journeys through Japan's mountainous forests, marvels at its zen gardens and admires centuries-old bonsai, to explore the connections between Japanese culture and the natural environment. Travelling around Japan's stunning island geography, he examines how the country's two great religions, Shinto and Buddhism, helped shape a creative response to nature often very different to the West. But he also considers modern Japan's changing relationship to the natural world and travels to Naoshima Art Island to see how contemporary artists are finding new ways to engage with nature.

**MON 23:00 Wild Swimming with Alice Roberts (b0019r28)**

Alice Roberts embarks on a quest to discover what lies behind the passion for wild swimming, now becoming popular in Britain. She follows in the wake of Waterlog, the classic swimming text by journalist and author Roger Deakin.

Her journey takes in cavernous plunge pools, languid rivers and unfathomable underground lakes, as well as a skinny dip in a moorland pool. Along the way Alice becomes aware that she is

not alone on her watery journey.

**MON 00:00 Sword, Musket & Machine Gun: Britain's Armed History (b087ljsj)**  
Cut & Thrust

In the first of this three-part series, Dr Sam Willis charts the evolution of weaponry in Britain throughout the Middle Ages.

Beginning with the Battle of Ethandun in 878, when the future of Anglo-Saxon England lay in the balance, Sam examines the weapons and tactics used by King Alfred to keep the Viking raiders at bay, and gets hands-on experience as he joins re-enactors behind a shield-wall, used by the Anglo-Saxons en masse as an attacking weapon to drive back and defeat the Vikings.

Sam travels to France to examine the famous Bayeux Tapestry, with its depiction of the huge arsenal massed by William the Conqueror for his invasion of England in 1066. With the Norman mounted knight came innovations in weapon technology, chiefly stronger and lighter swords, and Sam is given a lesson in swordsmanship using the earliest known combat manual.

Sam also visits the Chateaux de Tancarville in Normandy to tell the story of William Marshal, said to be the greatest knight who ever lived, and how he forged his reputation using a new weapon - the lance - in the extreme sport of its day, the tourney. To get a real sense of the tourney, Sam watches a display of its later incarnation - the joust.

The increasing number of castles and sieges brought with it a new age of projectile missile weaponry, principally the crossbow. Holed up in a castle tower, Sam gets to test-fire different crossbows and discovers why they became outlawed by the pope as instruments of the devil. Visiting the battlefield sites of Halidon Hill in Northumberland and Crecy in northern France, and again getting hands-on with the weapon in question, Sam examines how King Edward III strategically deployed the traditional longbow in vast numbers to devastating effect against the Scots and the French, and as such how it came to be regarded as the chief weapon of the Middle Ages.

**MON 01:00 Great British Railway Journeys (b0915kf0)**  
[Repeat of broadcast at 19:00 today]

**MON 01:30 Maggi Hambling: Making Love with the Paint (m000nx23)**  
[Repeat of broadcast at 21:00 today]

**MON 02:30 Secrets of the Museum (m000f1xp)**  
[Repeat of broadcast at 20:00 today]

**TUESDAY 07 SEPTEMBER 2021**

**TUE 19:00 Great British Railway Journeys (b0915lfr)**  
Series 9

Letchworth Garden City to Herne Hill

Armed with his early 20th-century Bradshaw's guide, Michael Portillo explores an Edwardian utopia with a radical plan at its heart.

Michael joins a garden party where a fourth-generation citizen of Letchworth introduces him to the city's community spirit. Heading into the capital, Michael discovers a favoured haunt of King Edward VII and samples the monarch's favourite tipple, the King's Ginger, invented to keep him warm in his horseless carriage.

Improvements to the London Underground in the early 20th century gave us a network of electric railways, which shaped our modern capital. Inside London's newest rail tunnel, Michael meets engineer Jonathan Cooper to discover more about current improvements to London's oldest deep-level tube line, the Northern line, which is being extended.

**TUE 19:30 The Joy of Painting (m000zcg9)**  
Series 4

Winter Lace

Snow-covered trees and shrubs that appear to be dressed in finest lace among the soft glows of winter. Another painting in Bob Ross's unique style!

**TUE 20:00 The Good Life (p00bzc88)**  
Series 2

Mutiny

Sitcom about a couple who try to live self-sufficiently in Surbiton. It's Margo's first night in the Sound of Music, and Jerry receives some unpleasant news.

**TUE 20:30 Porridge (b00786yd)**

Series 1

Men without Women

Classic comedy series set in HM Prison Slade. When Fletcher assumes the role of agony aunt to his fellow inmates, he ends up writing letters home for them.

**TUE 21:00 Welsh Greats (b00j092z)**

Series 2

Harry Secombe

Aled Jones presents the funny, warm and moving life story of comedian and singer Harry Secombe, a down-to-earth Swansea lad who became one of the nation's best-loved entertainers.

From The Goons to Highway, from Pickwick to Songs of Praise, he 'ruled the world' with a giggle and a song. But Harry's good humour gave no hint of the serious challenges he had faced, from the brutality of war to life-threatening illness.

Featuring Peter Sellers and Spike Milligan, the programme reminds us of Harry's natural warmth, his faith, and his infectious humour.

**TUE 21:30 Parkinson (m000zgcj)**

The Goons

Parkinson chats with the Goons - Harry Secombe, Peter Sellers and Spike Milligan - bandleader Ray Ellington and actors Alf Costa and Jay Neill.

**TUE 22:45 The Art of Japanese Life (p054md5m)**

Series 1

Cities

Dr James Fox explores how the artistic life of three great Japanese cities shaped the country's attitudes to past and present, east and west, and helped forge the very idea of Japan itself.

Beginning in Kyoto, the country's capital for almost a thousand years, James reveals how the flowering of classical culture produced many great treasures of Japanese art, including The Tale of Genji, considered to be the first novel ever written. In the city of Edo, where Tokyo now stands, a very different art form emerged, in the wood block prints of artists such as Hokusai and Hiroshige. James meets the artisans still creating these prints today, and discovers original works by a great master, Utamaro, who documented the so-called 'floating world' - the pleasure district of Edo.

In contemporary Tokyo, James discovers the darker side of Japan's urbanisation, through the photographs of street photographer Daido Moriyama, and meets one of the founders of the world-famous Studio Ghibli, Isao Takahata, whose haunting anime film Grave of the Fireflies helped establish anime as a powerful and serious art form.

**TUE 23:45 Sword, Musket & Machine Gun: Britain's****Armed History (b0888mjv)**

The Big Bang

Dr Sam Willis charts the impact of gunpowder on the battlefield, from cannons to the first handheld weapons.

His journey starts in the 13th century with Oxford scientist and monk Roger Bacon, believed to be the first Englishman to write down a recipe for gunpowder. Sam sees one of the largest surviving medieval cannons still in existence - Mons Meg in Edinburgh Castle. He examines a primitive 1400s 'handgonne' in the Tower of London Armouries that seems more like a mini cannon, with no trigger.

Sam tells the story of the Earl of Moray James Stewart who was regent of Scotland having ejected Mary Queen of Scots from the throne in 1570.

Sam next tells the story of the gunpowder plot. He includes lesser-known details of the 1605 attempted attack. For example, Guy Fawkes was discovered not just once but twice. Also the amount of gunpowder is thought to have been far more than was required. Another strange side to gunpowder's story is revealed - the saltpetre men. Gunpowder requires three ingredients - charcoal, sulphur and saltpetre. In the 17th century

chemistry was primitive. Saltpetre or potassium nitrate forms from animal urine and the saltpetre men would collect soil where animals had urinated. This meant they dug up doves, stables and even people's homes. They had sweeping powers to come onto people's property and take their soil. They abused these heavily and one of the grievances against King Charles I was the heavy handedness of the saltpetre men.

Eventually, the conflict with the king would turn into the English Civil War. A key weapon in this war was the musket. It was so basic blacksmiths could churn it out by the dozen. Sam fires one with the help of expert gunsmith Robert Tilney. He shows both the musket's power and the lack of accuracy. Muskets were inaccurate but the tactic used was to wait until opponents were very close and then fire one huge volley. Sam shows that the musket would then be used as a heavy club.

Gunpowder weapons gave different injuries to swords and arrows. This led to changes in battlefield surgery, and one who was a key influence was surgeon Richard Wiseman. Sam shows that Wiseman had learnt that any cloth or fragment left from a bullet wound could cause infection and kill the patient.

Finally, Sam travels to Saint Malo in France to tell the story of a frightening attack by the British. In 1693, France and Britain were at war and French pirates had been attacking English ships. Captain John Benbow was asked to launch an attack using a ship crammed with gunpowder. Benbow put 20,000 pounds of gunpowder into the ship as well as many other inflammable ingredients - pitch, straw, sulphur, mortars and grenades. He planned to put this 'Infernal', as it was known, right next to the harbour walls of Saint Malo. But as the ship came near it struck a rock and held fast, within a pistol shot of the town. Then the ship exploded. The sound was heard 100 miles away yet a witness claimed 'no life was lost except a cat in a gutter.' The explosion was 'terrible beyond description' and it shows how far the English were prepared to go in the name of national security.

**TUE 00:45 Great British Railway Journeys (b0915lfr)**

[Repeat of broadcast at 19:00 today]

**TUE 01:15 Welsh Greats (b00j092z)**

[Repeat of broadcast at 21:00 today]

**TUE 01:45 Unlocking Nature's Secrets: The Serengeti Rules (m000b8p4)**

[Repeat of broadcast at 23:00 on Sunday]

**WEDNESDAY 08 SEPTEMBER 2021****WED 19:00 Great British Railway Journeys (b0915mn5)**

Series 9

Croydon to Shoreham-by-Sea

Steered by his Edwardian Bradshaw's guide, Michael Portillo arrives in west Croydon, where he uncovers a once-celebrated, now forgotten, mixed-race composer with an uncannily familiar name. With the modern British rail network now half the size of the Edwardian one, Michael is delighted to discover a railway renaissance in Three Bridges.

After inspecting a new depot and its fleet of new Class 700 trains, Michael is accorded the great honour of washing one down. Next stop Lewes, where Michael makes a beeline for Charleston, the beautiful home of the artists Vanessa Bell and Duncan Grant, where he finds every surface exquisitely decorated by the inhabitants. At Shoreham-by-Sea, Michael discovers that magnificent Edwardians in flying machines took off from the oldest licensed airport in the country. Michael takes to the skies.

**WED 19:30 The Joy of Painting (m000zgd7)**

Series 4

Rowboat on the Beach

It's such a tranquil day down at the beach! Join Bob Ross as he paints a lovely little rowboat waiting for its owner's return.

**WED 20:00 Earth's Great Rivers (b0bwqpbj)**

Series 1

Mississippi

It is an unexpected and contrasting journey through America's iconic and varied landscapes as the Mississippi flows from source to mouth. The Mississippi's greatest surprise is its incredible reach. Its fingers stretch into nearly half of the USA, collecting water from 31 states. More than any other, this one river has helped unite the many and varied parts of America.

The Mississippi's longest tributary begins life in the depths of winter, in the towering Rocky Mountains of Wyoming and Montana. Billions of tonnes of water, ultimately destined to flow south are trapped as ice and snow. Here, its headwaters are a draw for the world's top ice climbers, who celebrate winter with daring climbs up towering frozen waterfalls - surely the most dangerous and spectacular winter faces of the ice-bound Mississippi.

In this frozen wilderness, a handful of tenacious coyotes have learned to fish, in one remarkable Mississippi headwater kept flowing by the steaming geysers of Yellowstone National Park. In the bone-chilling water, the coyotes stand stock still for hours, risking severe hypothermia in the hope of pouncing on a fish. Spring in the Upper Mississippi in Minnesota, arrives on the wings of tens of thousands of white pelicans who bring the river to life. Both comical and beautiful, their crowded flotillas put on balletic, synchronised fishing displays. On the other side of the continent in crystal-clear Appalachian Mountain streams, some devious parents employ the creepiest childcare strategy on earth. Freshwater mussels produce bizarre growths which mimic small fish. These lifelike lures even have false eyes and dance, imitating real fish. Their purpose is to act as living bait, tricking larger predatory fish into attacking them. Once bitten, a cloud of blood-sucking baby mussels clamp onto the unwitting fish's gills. After several weeks of feeding on their victim's body fluids, they drop off and disperse. These sneaky mussels provide their babies with food and transport to different parts of the river. It is a macabre underwater puppet show, made all the more weird as the puppet master (the parent mussel) is blind and has no idea what a fish looks like.

But the spring thaw also means extra work for busy beavers - safe in their cosy lodges all winter, they must now venture out to repair the damage that the rushing meltwater has done to their precious dams. As the river flows south through the central US, it becomes a vital transport link. Special cameras take us on a time-travelling journey down the busiest section of the river. A gigantic boat zooms hundreds of miles downriver in seconds, flashing through night and day. This is the industrial heart of the river. Even here, the river still hosts incredible wildlife spectacles. Each Independence Day, millions of mayflies gather in swarms so large they can be seen on weather radar.

As it flows into the south, it spreads and slows, feeding the largest swamp in the US - the fertile, mysterious Atchafalaya. Over 2,000 square miles of wetlands, where alligators still rule. This is one of the richest and most diverse wilderness regions of the states, - a melting pot where racoons and beavers mix with tropical specialties like roseate spoonbills and emerald-green anole lizards. These backwaters are the fabled spirit of the Mississippi made famous by Mark Twain and the Blues. As the massive river nears the ocean, it passes cities that have grown up along its banks - like New Orleans. Here 60 miles of docks make it the largest port in the western hemisphere where goods brought down the Mississippi are transferred to huge ocean going ships.

At the end of its 3,500-mile journey, the Mississippi eventually creates one of the biggest river deltas on the planet. But today this delta is under threat. Damming and controls along the river's length are preventing the Mississippi's natural flood cycles - it can no longer replace land that the ocean washes away. This remarkable delta is home to millions of migrant birds and protects vast areas inland from hurricane surges. Its preservation is key to both the people and the wildlife here. The delta is a landscape built by the river from cornfields in Iowa, mountainsides in the Rockies and sediment from Tennessee streams - all collected and deposited by one huge river which unites and defines one great nation.

**WED 21:00 H2O: The Molecule That Made Us (m000zgd9)**

Series 1

Crisis

Gaza is a microcosm of a world without access to water. As the planet heats up, droughts may have become more commonplace, but that doesn't mean that water is disappearing.

Storm chasers and photographers track the global changes in giant storms and floods across America. Nasa's Grace satellites reveal a new map showing global overuse of aquifers. In some places, underground water is being 'mined' - finite reserves, which are being used up for profit.

But there are solutions too. New York City uses nature and the Catskill mountains instead of an industrial plant for water treatment, demonstrating a collective appreciation for the importance of water.

**WED 21:55 Garage People (m000zgdC)**

In the Russian Arctic, there is a phenomenon beyond ice fishing, matryoshkas and vodka. It's the garage. Rows of tin sheds, inhospitable from the outside, where everything can be found except cars. They are the refuge of the Russian man. A

few square metres to dream and escape the pressures of life. This is where illegal fish shops operate, where saints are carved, where booze is distilled and where quails are bred.

In this film, the 'Garage People' speak for themselves, and with each other, sharing their concerns, fears and joys, and giving an insight into a secret world of everyday Russians.

**WED 23:30 The Art of Japanese Life (p054mdmy)**  
Series 1

Home

In the final episode, Dr James Fox explores the art of the Japanese home. The clean minimalism of the Japanese home has been exported around the world, from modernist architecture to lifestyle stores like Muji. But the origins of this ubiquitous aesthetic evolved from a system of spiritual and philosophical values, dating back centuries. James visits one of Japan's last surviving traditional wooden villages, and the 17th-century villa of Rinshunkaku, and reveals how the unique spirit of Japanese craftsmen (shokunin) turned joinery into an artform - creating houses without the need for nails, screws or even glue.

Exploring some of the traditional arts of the Japanese home (where even food and flower arranging have been elevated to the level of art), James also investigates attitudes to domestic culture in modern Japan, meeting photographer Kyoichi Tszuki, chronicler of Japan's crowded cities and tiny apartments.

Other highlights include a performance by calligrapher and artist Tomoko Kawao and a visit to the hometown of Terunobu Fujimori, one of the most singular and playful contemporary architects working in Japan today.

**WED 00:30 Mercury Prize (b06q693n)**  
2015

Mercury Prize Winners at the BBC

Selected archive performances from a variety of Mercury Prize winners on a mixture of BBC shows down the years.

Previous winners have included Primal Scream, M-People, Portishead, Roni Size, Dizzee Rascal, Elbow, Arctic Monkeys and James Blake, to name but a few.

The Mercury Music Prize launched in 1992 and 2015 will see its 24th winner.

**WED 01:30 Great British Railway Journeys (b0915mn5)**  
[Repeat of broadcast at 19:00 today]

**WED 02:00 Earth's Great Rivers (b0bwqpbj)**  
[Repeat of broadcast at 20:00 today]

**WED 03:00 H2O: The Molecule That Made Us (m000zgd9)**  
[Repeat of broadcast at 21:00 today]

**THURSDAY 09 SEPTEMBER 2021**

**THU 19:00 BBC Proms (m000zgf)**  
2021

John Wilson and the Sinfonia of London

Suzy Klein presents a glorious evening of music inspired by Vienna. John Wilson conducts the award-winning Sinfonia of London in Johann Strauss's sumptuous overture to Die Fledermaus, which incorporates a famous Viennese waltz, complemented by a performance of Ravel's darker La Valse.

The programme also offers insights into some different styles of Viennese music, with Berg's intimate Seven Early Songs, performed by Nigerian-American soprano Francesca Chiejjina, plus Korngold's rarely heard Symphony in F Sharp.

**THU 21:00 Mercury Prize (m000zgf)**  
2021

Hyundai Mercury Prize 2021 Live: Album of the Year

Lauren Laverne hosts coverage of this year's Hyundai Mercury Prize Album of the Year, which returns to its home at the Eventim Apollo, Hammersmith, London.

2021's shortlist reflects the current eclectic music scene in both the UK and Ireland, and this show will recognise all of the shortlisted albums through special performances and VTs,

culminating in the live announcement of this year's winner. The judges making the selection are a panel of artists, broadcasters and music industry heavyweights that includes last year's winner Michael Kiwanuka.

Performing on the night will be the likes of Arlo Parks, Celeste, Ghetts, Mogwai, BERWYN and previous Mercury Prize winners Wolf Alice.

This year's 12 shortlisted albums are:

Arlo Park's Collapsed in Sunbeams, the debut record from the west London singer-songwriter dubbed as the voice of generation who uses her poetic and personal lyrics to cover subjects from unrequited love to mental health issues.

Another debut, Demotape/Vega, comes from Trinidadian-born and Romford-raised BERWYN. Inspired by the trials and adversity of his life, the singer produced and recorded the record at home in just two weeks.

Seven-piece genre-traversing rock group Black Country, New Road released their inventive debut For the First Time in February, capturing the ferocity and energy of their sound by recording the songs live in only six days.

New star of British soul Celeste topped the charts with her shortlisted debut Not Your Muse on its January release. Each of the songs pinpoint a specific moment in her life, delivered in her unique enrapturing voice.

Promises is the unique collaborative album that brings together British electronic musician Sam Shepherd aka Floating Points, American jazz saxophonist Pharoah Sanders and the legendary LSO to create a sweeping and beautiful nine-movement record

The sixth shortlisted album is Ghetts's Conflict of Interest, which sees the pioneer of grime make his major label debut, demonstrating his growth over almost two decades of making music with an earnest and honest offering, featuring collaborations with the likes of Stormzy and Ed Sheeran.

Northern Irish composer, producer and broadcaster, Hannah Peel, gets her first Mercury nod for her album Fir Wave, which reflects the natural world through electronic music.

Previously shortlisted artist Laura Mvula's third album Pink Noise gains her a third nod and sees her draw heavily on sounds from the 80s, reconnecting with the music she was raised on and loves.

Glasgow based post-rock band Mogwai's tenth studio album As the Love Continues was released on their own label Rock Action Records and scored them a number one, their first top spot in a career that has spanned a quarter of a century.

Nubya Garcia's Source is the debut by the much-revered contemporary jazz saxophonist. It's a deeply personal offering in which Garcia maps cartographies around the coordinate points of her identity: her family histories, grief, Afro-diasporic connections and collectivism.

The penultimate of this year's set comes from the mysterious and elusive collective Sault, whose fourth critically acclaimed studio album Untitled (Rise) was released in September last year with little more being known about the group, aside from the involvement of producer Inlo.

Completing the 12 is Blue Weekend, the third album from 2018 Mercury Prize-winning rockers Wolf Alice, which sees the London four-piece deliver a confident progression from their previous two, scoring them a number one and undoubtedly cementing them in the next generation of festival headliners.

**THU 22:15 The Heroes of Telemark (b00b6vc6)**

Occupied Norway, 1942. A team of resistance fighters undertake the vital and dangerous mission to destroy the Nazis heavy water plant to prevent the Nazis producing an atomic bomb. Based on a true story.

**THU 00:20 Sword, Musket & Machine Gun: Britain's Armed History (b088sznj)**  
Rapid Fire

In the concluding episode, Dr Sam Willis charts the evolution of weaponry in Britain from 1800 to the First World War, looking at the drive to develop ever more precise weapons, from artillery shells to rifles to the Maxim machine gun.

The pace of technological change in the 19th century was phenomenal. Sam test-fires a 'Brown Bess' musket, the infantry weapon of choice at Waterloo in 1815 and discovers that a well-trained soldier could fire up to three shots a minute. He also looks at efforts to make artillery more effective on the battlefield with the invention of spherical case shot, a new type of shell that was named after its inventor - Henry Shrapnel.

Sam finds out how accessible firearms were to the public in the early 19th century and tells the little-known story of Spencer Percival, the only British prime minister ever to be assassinated, shot at point blank range in the lobby of the House of Commons in 1812.

By the turn of the 20th century, several inventors believed that they could banish war if they invented the ultimate weapon, an instrument so horrific that no-one would dare use it. In the 1880s, Hiram Maxim, an American inventor, devised the first 'Maxim' machine guns in his workshop in Hatton Garden, London. The first rapid-fire weapon to harness the energy of its own recoil, the Maxim gun, and its successor the Vickers machine gun, could fire 600 rounds a minute and were used to devastating effect on the battlefields of the First World War.

Automatic weapons were also sought by criminal gangs, as Sam discovers when he looks back at one of the most infamous sieges of the 20th century - the Siege of Sidney Street in 1911.

The series culminates in a remarkable experiment to find out whether a bulletproof vest made of silk might have stopped a bullet fired at Archduke Franz Ferdinand. With the aid of the Royal Armouries, Sam conducts a unique experiment with assistant firearms curator Lisa Traynor to prove that a bulletproof vest owned by the archduke would have stopped a bullet fired by his assassin, Gavrilo Princip. The killing of the archduke on June 28 1914 set in motion a chain of events that led to the outbreak of the First World War.

World War I was the deadliest war of its age, with the most technologically advanced firearms and weapons of almost medieval brutality used to wage a devastating conflict. When the firing finally stopped on November 11, 1918, an estimated 17 million people had died and 20 million had been wounded. In the aftermath of World War I, we now put increasing faith in treaties, international conventions and diplomacy. Surely we could never allow such carnage to happen again?

**THU 01:20 Swimming through the Seasons: The Hampstead Ponds (m000599z)**

In a world of constant flux and chaos, it is almost a shock to discover some experiences remain unchanged, natural, primitive even. In the middle of London lies Hampstead Heath, 320 hectares of forest, parkland and wildlife, plus three swimming ponds.

People take their waters all year round, just as they did in the time of Constable and Keats. Capturing all the beauty of the English seasons, the film follows the swimmers over 12 months as they shiver, laugh, complain, ruminate, philosophise or simply seek respite from all that life threw at them.

Swimming Through the Seasons is a heartwarming celebration of eccentricity and sheer bloody-mindedness as these unusual people, united by a shared passion, meet to take on the weather, the water and life.

**THU 02:20 The Art of Japanese Life (b08v8gxj)**  
[Repeat of broadcast at 22:00 on Monday]

**FRIDAY 10 SEPTEMBER 2021**

**FRI 19:00 BBC Proms (m000zgg3)**  
2021

Bach's St Matthew Passion

Bach's profound choral masterpiece, the St Matthew Passion, transcends eras and faiths with its exploration of courage, compassion, sacrifice and redemption. Here, it crowns the BBC Proms season in a performance by period instrument ensemble Arcangelo, directed from the harpsichord by Jonathan Cohen. They are joined by a double choir and a stellar line-up of soloists, including Iestyn Davies, Roderick Williams and rising star Stuart Jackson.

Anna Lapwood presents from the Royal Albert Hall, with musician and broadcaster Hannah French as her guest.

**FRI 22:00 The Everly Brothers: Harmonies from Heaven (b077x1fh)**

Documentary which celebrates, over the period covering the end of the 1950s and the beginning of the 60s, the phenomenon of The Everly Brothers, arguably the greatest harmony duo the world has witnessed, who directly influenced the greatest and most successful bands of the 60s and 70s - The Beatles, The Stones, The Beach Boys and Simon & Garfunkel to name but a few.

Don and Phil Everly's love of music began as children, encouraged by their father Ike. Little Donnie and Baby Boy Phil sang on Ike's early morning radio shows in Iowa.

After leaving school, the brothers moved to Nashville where, under the wing of Ike Everly's friend, the highly talented musician Chet Atkins, Don and Phil signed with Cadence Records. They exploded onto the music scene in 1957 with Bye Bye Love, written by Boudleaux and Felice Bryant.

After Bye Bye Love came other hits, notably Wake Up Little Susie, followed by the worldwide smash hit All I Have to Do Is Dream and a long string of other great songs which also became hits.

By 1960, however, the brothers were lured away from Cadence to Warner Bros with a \$1,000,000 contract. Their biggest hit followed, the self-penned Cathy's Clown, which sold 8 million copies. Remaining at Warner Bros for most of the 60s, they had further success with Walk Right Back, So Sad and the King/Greenfield-penned track Crying in the Rain.

**FRI 23:00 Arena (b03tx91g)**

The Everly Brothers: Songs of Innocence and Experience

The Everly Brothers were among the most successful and revered of all the giants of early rock 'n' roll. A determining influence on the Beatles, Simon and Garfunkel and the Beach Boys, they brought the ethereal harmonies of the Appalachian Mountains to the wild mix of rock 'n' roll.

First broadcast in 1984 as part of their reunion after ten bitter years apart, Arena traces their fabulous career, their split and triumphant reunion. Most of all, Don and Phil wanted to revisit their roots in the coal mining area of Kentucky where their father Ike, a miner, had been a local guitar star. He too had played with his coal mining brothers, in the 30s. In the moody atmosphere of Muhlenberg County, they have an emotional reunion with three generations of Everlys.

With contributions from master musician and producer Chet Atkins, songwriters Felice and Boudleaux Bryant and the legendary guitar singer and ex-coal miner, Ike's close friend Mose Rager.

**FRI 00:35 Arena (b03txrsz)**

The Everly Brothers Reunion Concert

In the autumn of 1983, the Everly Brothers played their legendary reunion concerts in London. Of all the venues in the world, they chose the Royal Albert Hall because they had treasured memories of playing there with their father Ike, a guitar virtuoso in his own right.

All London was there and it was such an event that the filming was fed live into the BBC 9 O'Clock News. After their acrimonious split, which had lasted ten years, Arena's cameras proved that they and their unique, beautiful sound were as magical as ever.

First broadcast at Christmas 1983.

**FRI 01:50 Motherland (m000w753)**

Series 3

Episode 2

The mums (and dad) join the merry-go-round of secondary school open days as they face the choice of where to send their kids at 11. Julia panics about which catchment area she lives in and even considers a fake religious conversion to beat the system. As Kevin's divorce progresses, Liz helps him navigate the shark pool of lawyers and makes a worrying discovery about her own situation along the way. Meanwhile, queen bee Amanda struggles with playing second fiddle to Meg's illness.

**FRI 02:20 The Everly Brothers: Harmonies from Heaven (b077x1fh)**

[Repeat of broadcast at 22:00 today]