

SATURDAY 04 AUGUST 2018

SAT 19:00 Mountain: Life at the Extreme (b0956rpl)
Series 1

Andes

The final episode of the BBC's landmark wildlife series.

The Andes is the longest mountain range in the world and home to astonishing hidden worlds, extraordinary animals and remarkable people. A female puma and her three cubs hunt in the mountains of the frozen south. Spectacled bears search for water on scorched mountain forests, and the descendants of the Inca gather in an ancient ceremony to build a bridge made from woven grass. High in the cloud forest, a newly discovered shape-shifting frog baffles scientists with its superpowers and in the Atacama desert - the driest place in the world - strange reptiles battle for access to precious water. This is the mountain range of surprise and wonder.

SAT 20:00 Wonders of the Monsoon (p026glvn)
Strange Castaways

On the Indonesian island of Sulawesi, black crested macaques thrive in large troops. They are amongst the most 'loving' of monkeys, showing affection not just amongst close family, but across the whole group. A key reason is the abundance of fruit brought by the monsoon climate, providing enough for everyone.

On the beach, maleo birds, another species found only on Sulawesi, take advantage of the equatorial sun-heated sand to incubate their eggs before the storms come. There is fierce competition for the best spots. But some maleo birds bury their eggs in the forest, exploiting the underfloor heating provided by volcanic activity.

The combination of monsoon and volcanoes has created a paradise. The towering peaks help to precipitate even more rain and volcanic ash fertilises the plants. In thanks for this, locals in Java climb the volcano to offer goats and chickens as live sacrifices to its god.

But in rainswept Borneo, there are no active volcanoes. Over thousands of years, the frequent and heavy rains of the tropical monsoon have destroyed the soil. The ensuing cut-throat competition for scarce nutrients has driven evolution to produce some curious characters. Pitcher plants have evolved ingenious ways to trap food. The rajah brooke's pitcher entices tree shrews, not to eat them, but to encourage them to relieve themselves so the plant gets the nutrients it needs.

Fallen leaves and dead matter are hungrily snapped up by a motley crew of scavengers. Amongst the most sinister is the giant Bornean red leech, which preys upon the giant blue earthworm, swallowing the whole thing in one gulp.

All of this serves to feed the kings of the forest, in the end, as the nutrients of all these creatures return to the trees.

SAT 21:00 Cardinal (b0bfd8m2)
Series 2

Red

Detective Commanda finds a confused young woman, alone at a roadside bar. The red-haired woman has no memory of who she is, how she got there, or who shot her. Even after the bullet is removed, 'Red' can't remember anything. Commanda turns the case over to Cardinal and Delorme, who must protect Red while trying to uncover her identity and find her shooter. While on the trail of a stolen gun that may be the murder weapon, they find another victim, not shot this time but ritually murdered and left in a gruesome tableau.

SAT 21:40 Cardinal (b0bfdbwq)
Series 2

Kevin

Cardinal and Delorme's investigation leads them to a local motorcycle gang as the number of victims continues to rise.

SAT 22:25 The Summer of Love: How Hippies Changed the World (b08tr64x)
Series 1

Episode 2

The second episode explores how the Summer of Love of 1967 set in motion an era of social upheaval that pitted America's youth against its elders and how the American government responded with a series of brutal crackdowns. The hippies failed politically, but their cultural influence changed the world.

Everything from the environmental movement to the explosion in alternative health practices to the birth of feminism all grew out of this moment. And most surprising of all, we trace how hippie ideas first imagined on LSD went on to shape the information age itself.

SAT 23:25 Top of the Pops (b0bdq2b5)

Simon Bates and Paul Jordan present the pop chart programme, first broadcast on 6 February 1986. Featuring The Damned, Five Star, Ozzy Osbourne and Double.

SAT 23:55 Top of the Pops (b0bdq3ms)

Gary Davies and Steve Wright present the pop chart programme, first broadcast on 13 February 1986. Featuring Belouis Some, Whitney Houston, Su Pollard, Shakin' Stevens and Billy Ocean.

SAT 00:25 Jazz Divas Gold (b01sbxqy)

BBC Four explores the archives for the sultry sounds and looks of 'Jazz Divas Gold'. Featured Jazz legends include Ella Fitzgerald, Marion Montgomery, Cleo Laine, Blossom Dearie, Sarah Vaughan, Nina Simone, Peggy Lee, Betty Carter, Amy Winehouse, Eartha Kitt and many more who can be seen from 1965 to 2008 on BBC treasures such as Not So Much a Programme, More a Way of Life, Show of the Week, Not Only...But Also, Birdland, Parkinson, Later...with Jools Holland, Morecambe and Wise and more...so let's hear it for the ladies!

SAT 01:25 Mountain: Life at the Extreme (b0956rpl)
[Repeat of broadcast at 19:00 today]

SAT 02:25 Wonders of the Monsoon (p026glvn)
[Repeat of broadcast at 20:00 today]

SAT 03:25 Top of the Pops (b0bdq2b5)
[Repeat of broadcast at 23:25 today]

SUNDAY 05 AUGUST 2018

SUN 19:00 BBC Proms (b0bf7kn6)
2018

Beethoven, Brahms and Tansy Davies

Exploring light and dark, life and loss, through the music of Beethoven, Brahms and the contemporary composer Tansy Davies, this Prom sees the BBC Philharmonic led by youthful principal guest conductor Ben Gernon.

Proms regular Paul Lewis returns for Beethoven's evergreen final piano concerto, the Emperor, having played the complete cycle of five concertos in the 2010 season. And Beethoven's influence is strong in Brahms's sunny, pastoral Second Symphony that follows. Opening the evening in contemplative mode, the world premiere of Tansy Davies's orchestral suite What Did We See? reframes material from her acclaimed opera Between Worlds. Inspired by the events of 9/11 and the ordinary people caught up in it, this is a work of both remembrance and healing.

SUN 21:00 Archaeology: A Secret History (p0109k4g)
The Power of the Past

Archaeologist Richard Miles presents a series charting the history of the breakthroughs and watersheds in our long quest to understand our ancient past. He shows how 20th-century attention turned from civilisation and kings to the search for the common man against a background of science and competing political ideologies.

SUN 22:00 Entertaining the Troops (b014v51p)

During World War Two an army of performers from ballerinas to magicians, contortionists to impressionists, set out to help win the war by entertaining the troops far and wide. Risking their lives they ventured into war zones, dodging explosions and performing close to enemy lines. Featuring the memories of this intrepid band of entertainers and with contributions from Dame Vera Lynn, Eric Sykes and Tony Benn, this documentary tells the remarkable story of the World War II performers and hears the memories of some of those troops who were entertained during the dark days of war.

SUN 23:00 Arena (b03yg3yn)
Whatever Happened to Spitting Image?

Reuniting the founding creative team, this documentary tells the vexed and frequently hilarious story of the genesis of the satirical puppet show Spitting Image, with exclusive

contributions from caricaturists Peter Fluck and Roger Law and TV producer John Lloyd.

Spanning the early years of Margaret Thatcher's government to the end of John Major's, Spitting Image puppets became almost as famous as the politicians they lampooned. In 2000, the puppets were auctioned off at Sotheby's and in the course of the programme the team sets out to discover where they now reside and who is taking care of them in their old age.

Revealing the extraordinary technical achievement of the series, Arena meets the caricaturists, puppet-mould makers, designers, puppeteers, impressionists, writers and directors who worked tirelessly to ensure the show landed its weekly jibes and punches at the politicians, royals and celebrities of the day.

Tracing its journey to our television screens through 12 years of huge audience figures and weekly controversy to its eventual demise, the film asks what Spitting Image got right, where it went wrong and whether its absence since 1996 has left a hole in the schedules that has yet to be filled by modern broadcasting.

SUN 00:00 Natural World (b00ybvz1)
2010-2011

Elsa: The Lioness that Changed the World

In the 1960s, Born Free captured the world's imagination with the story of Elsa, an orphaned lioness who was taken in by George and Joy Adamson and returned to a life in the wild. The book and film sparked a new love of nature that has blossomed ever since, but the true story of what happened afterwards was far more tragic as both George and Joy were murdered.

Fifty years on, this emotional and revealing drama documentary relives those events - with intimate contributions from Virginia McKenna and David Attenborough.

SUN 01:00 Timeshift (b03mp53s)
Series 13

The Ladybird Books Story: The Bugs that Got Britain Reading

To millions of people, Ladybird books were as much a part of childhood as battery-powered torches and warm school milk. These now iconic pocket-sized books once informed us on such diverse subjects as how magnets work, what to look for in winter and how to make decorations out of old eggshells. But they also helped to teach many of us to read via a unique literacy scheme known as 'key words'. Ladybird books were also a visual treat - some of the best-known contemporary illustrators were recruited to provide images which today provide a perfect snapshot of the lost world of Ladybirdland: a place that is forever the gloriously ordinary, orderly 1950s.

SUN 02:00 Arena (b08rnyxq)
American Epic

The Big Bang

The first episode takes us back to 1920s America, where the growth of radio had shattered record sales. Record companies travelled rural America and recorded the music of ordinary people for the first time. The poor and oppressed were given a voice as their recordings spread from state to state.

The film introduces the early recordings of The Carter Family, the founders of modern country music, steeped in the traditions of their isolated Appalachian community. It also features Will Shade and the Memphis Jug Band, whose music told the story of street life in Memphis, and laid the foundations for modern-day rap and R'n'B.

Robert Redford narrates this meticulously researched story of a cultural revolution that changed the world.

SUN 03:00 Archaeology: A Secret History (p0109k4g)
[Repeat of broadcast at 21:00 today]

MONDAY 06 AUGUST 2018

MON 19:00 World News Today (b0bdvhdr)

The latest national and international news, exploring the day's events from a global perspective.

MON 19:30 Handmade (b05tpw1j)
Metal

As part of BBC Four Goes Slow, this programme follows the forging of a steel knife. From the slow stoking of the fire to the hammering, welding and etching of the metal, the film is an

absorbing portrait of the complex processes behind the making of the knife.

Forged in a spectacular industrial space, bladesmith Owen Bush uses a combination of modern and traditional techniques, some of which date to ancient times.

The most time-consuming element of the process is the shaping and blending of a sandwich of steels into a blade which, after polishing, is placed in a bath of acids, revealing an intricate pattern - a technique used by the Vikings and Saxons.

The bold style of the film-making, making use of long, static shots and with no music or commentary, allows the viewer to simply enjoy watching the painstaking and highly skilled craftsmanship.

MON 20:00 Italy's Invisible Cities (b088n133)
Series 1

Venice

Documentary series. Using the latest 3D scanning technology, Alexander Armstrong and Dr Michael Scott explore the watery wonderland of Venice.

They uncover how a city built in a swamp became one of the most powerful in medieval Europe and dive into its canals to experience how the city remains standing. Plus, they reveal how the city's beauty once masked a ruthless secret state and a world of excess and vice.

MON 21:00 Abducted - Elizabeth I's Child Actors (b0bdvxzn)

The gripping true story of a boy abducted from the streets of Elizabethan London, and how his father fought to get him back. Presented by acclaimed children's author and academic Katherine Rundell, this intriguing tale is set behind the scenes in the golden age of Shakespeare and sheds a shocking light on the lives of children long before they were thought to have rights.

Thirteen-year-old Thomas Clifton was walking to school on 13 December 1600, when he was violently kidnapped. And what's most extraordinary is that the men who took him claimed that they had legal authority to do so from Queen Elizabeth I herself. Children are so often missing from history, but this tale has survived by the skin of its teeth. This inventive film pieces together Thomas Clifton's story from contemporary accounts, court documents, plays and poetry, with the missing gaps beautifully illustrated by vivid hand-drawn animation.

Shedding light on politics, religion, money and fame at a time when society's anxieties were played out nightly on the stage, it is an unknown slice of British history, both bizarre and sinister. The snatching of Thomas Clifton had been organised by a theatrical impresario, who intended to put him on the stage as part of a company of child actors, who were enormously popular with the Elizabethan theatre. He wasn't the only boy lifted from the streets for this purpose - a whole host of others suffered a similar ordeal. It was a practice known as impressment - forced recruitment into public service - which meant that children could be legally taken without their parents' or their own consent.

MON 22:00 Story of Ireland (b00yvscy)
Age of Invasions

A new five-part landmark series, written and presented by BBC Special Correspondent Fergal Keane, *The Story of Ireland* is a clear-eyed and expansive view of the history of the island and its people from its earliest times to the present day. Far from being a remote European outpost, episode one charts the formation of Ireland's DNA by successive ways of invaders and settlers. Along the way, Keane exposes the myth of Ireland's Celtic identity - he travels to Norway and presents the Vikings as resourceful settlers and traders in Ireland rather than as the barbarous marauders of popular belief. He also follows the trail of the early Iris monks as they bring their literature and learning through Europe to re-energise the Christian world, in the early Middle Ages.

MON 23:00 Britain and the Sea (b03k2g3r)
Invasion and Defence

David Dimbleby continues his voyage round Britain, sailing his boat Rocket along the south east coast from Hampshire to Kent. This was the front line coast, the edge of Britain essential to its defence and the first point of attack for invasion forces. From the great battleships of Nelson to the sea forts of Henry VIII, this is a story that embraces Britain's darkest and most heroic moments.

MON 00:00 Fossil Wonderlands: Nature's Hidden Treasures (b03xsfqr)

Weird Wonders

Professor Richard Fortey journeys high in the Rocky Mountains to explore a 520 million-year-old fossilised seabed containing bizarre and experimental life forms that have revolutionised our understanding about the beginnings of complex life. Among the amazing finds he uncovers are marine creatures with five eyes and a proboscis, filter-feeders shaped like tulips, worm-like scavengers covered in spikes but with no identifiable head or anus, and a metre-long predator resembling a giant shrimp.

MON 01:00 Britain's Most Fragile Treasure (b0161dgg)
Historian Dr Janina Ramirez unlocks the secrets of a centuries-old masterpiece in glass. At 78 feet in height, the famous Great East Window at York Minster is the largest medieval stained-glass window in the country and the creative vision of a single artist, a mysterious master craftsman called John Thornton, one of the earliest named English artists.

The Great East Window has been called England's Sistine Chapel. Within its 311 stained-glass panels is the entire history of the world, from the first day to the Last Judgment, and yet it was made 100 years before Michelangelo's own masterpiece. The scale of Thornton's achievement is revealed as Dr Ramirez follows the work of a highly skilled conservation team at York Glaziers Trust. They dismantled the entire window as part of a five-year project to repair centuries of damage and restore it to its original glory.

It is a unique opportunity for Dr Ramirez to examine Thornton's greatest work at close quarters, to discover details that would normally be impossible to see and to reveal exactly how medieval artists made images of such delicacy and complexity using the simplest of tools.

The Great East Window of York Minster is far more than a work of artistic genius, it is a window into the medieval world and mind, telling us who we once were and who we still are, all preserved in the most fragile medium of all.

MON 02:00 Fig Leaf: The Biggest Cover-Up in History (b00ydp38)

Writer and broadcaster Stephen Smith uncovers the secret history of the humble fig leaf, opening a window onto 2,000 years of western art and ethics.

He tells how the work of Michelangelo, known to his contemporaries as 'the maker of pork things', fuelled the infamous 'fig leaf campaign', the greatest cover-up in art history, how Bernini turned censorship into a new form of erotica by replacing the fig leaf with the slipping gauze, and how the ingenious machinations of Rodin brought nudity back to the public eye.

In telling this story, Smith turns many of our deepest prejudices upside down, showing how the Victorians had a far more sophisticated and mature attitude to sexuality than we do today. He ends with an impassioned plea for the widespread return of the fig leaf to redeem modern art from cheap sensation and innuendo.

MON 03:00 Abducted - Elizabeth I's Child Actors (b0bdvxzn)
[Repeat of broadcast at 21:00 today]

TUESDAY 07 AUGUST 2018

TUE 19:00 World News Today (b0bdvhf3)

The latest national and international news, exploring the day's events from a global perspective.

TUE 19:30 Handmade (b05tpv83)

Glass

The first episode in the *Handmade* series, part of BBC Four Goes Slow, is a filmed portrait of the making of a simple glass jug.

Filmed in real time and without voiceover or music, the focus is entirely on the craft process, an absorbing, repetitive process of blowing and rolling as glass designer Michael Ruh delicately teases and manipulates the molten glass into shape.

Ruh is a designer of contemporary glass objects, but the method by which he creates them is essentially ancient.

Glass is heated in a crucible until it becomes liquid. Ruh's task, shared with his assistant, is to keep the glass hot and in constant motion as he breathes into it and gradually shapes the expanding globe into the form of a jug.

TUE 20:00 Andrew Marr's History of the World (p00xnrjb)
Original Series

The Word and the Sword

In the third episode of this landmark series charting the story of human civilisation, Andrew Marr plunges into the spiritual revolutions that shook the world between 300 BC and 700 AD.

This was an age that saw the bloody prince Ashoka turn to Buddhism in India, the ill-fated union of Julius Caesar and Egypt's Cleopatra, the unstoppable rise of Christianity across the Roman Empire and the dramatic spread of Islam from Spain to Central Asia.

Each dramatic story pits the might of kings and rulers against the power of faith. But Andrew Marr discovers that the most potent human force on the planet came from the combination of faith and military power. Both Christianity and Islam created new empires of 'the word and the sword'.

TUE 21:00 Mark Kermode's Secrets of Cinema (b0bf7wrl)
Series 1

Science Fiction

Mark Kermode continues his fresh and very personal look at the art of cinema by examining the techniques and conventions behind classic film genres, uncovering the ingredients that keep audiences coming back for more.

This time Mark explores the most visionary of all genres - science fiction, and shows how film-makers have risen to the challenge of making the unbelievable believable. Always at the forefront of cinema technology, science fiction films have used cutting-edge visual effects to transport us to other worlds or into the far future. But as Mark shows, it's not just about the effects. Films as diverse as *2001, the Back to the Future* trilogy and *Blade Runner* have used product placement and commercial brand references to make their future worlds seem more credible. The recent hit *Arrival* proved that the art of film editing can play with our sense of past and future as well as any time machine. Meanwhile, films such as *Silent Running* and *WALL-E* have drawn on silent era acting techniques to help robot characters convey emotion. And *District 9* reached back to Orson Welles by using news reporting techniques to render an alien visitation credible.

Mark argues that for all their spectacle, science fiction films ultimately derive their power from being about us. They take us to other worlds and eras, and introduce us to alien and artificial beings, in order to help us better understand our own humanity.

TUE 22:00 Twelve Monkeys (b01fhfjy)

Sombre time-travel thriller in which a convict from 2035 is sent back in time to find the cause of a virus which has wiped out most of the planet's population and driven the survivors underground. However, he accidentally arrives in 1990 instead of 1996 and is locked in an asylum where he meets a fellow inmate who may have a part to play in the epidemic. Inspired by Chris Marker's seminal 1962 short film *La Jetee*.

TUE 00:05 Horizon (b0bb33ht)
2018

How to Build a Time Machine

Time travel is not forbidden by the laws of nature, but to build a time machine, we would need to understand more about those laws and how to subvert them than we do now. And every day, science does learn more. In this film *Horizon* meets the scientists working on the cutting edge of discovery - men and women who may discover how to build wormholes, manipulate entangled photons or build fully functioning time crystals. In short, these scientists may enable an engineer of the future to do what we have so far been only able to imagine - to build a machine that allows us travel back and forward in time at the touch of a button. It could be you! Science fiction? Watch this space.

TUE 01:05 Italy's Invisible Cities (b088n133)
[Repeat of broadcast at 20:00 on Monday]

TUE 02:05 Mark Kermode's Secrets of Cinema (b0bf7wrl)
[Repeat of broadcast at 21:00 today]

TUE 03:05 Handmade (b05tpv83)
[Repeat of broadcast at 19:30 today]

WEDNESDAY 08 AUGUST 2018

WED 19:00 World News Today (b0bdvfh)
The latest national and international news, exploring the day's events from a global perspective.

WED 19:30 Handmade (b05tpx11)
Wood

As part of BBC Four Goes Slow, this programme follows the slow and painstaking process of making a classic Windsor chair.

A beautifully simple object, it is in fact anything but. Filmed over five days, the film reveals the complex, time-consuming processes involved in creating the chair, made by Jim Steele in his Warwickshire workshop.

This traditional design features woods chosen for their different qualities - ash, elm and hard-to-source yew.

Jim makes just 12 such chairs each year, using traditional techniques and aided by few modern tools. There are just two screws in the finished chair. From the steam bending of the back to the turning of spindles, the carving of the seat to the planing of the arms, it's a remarkable process to observe.

The bold style of the film, making use of long, static shots with no music or commentary allows the viewer to admire in exquisite detail the painstaking craftsmanship.

WED 20:00 1066: A Year to Conquer England (b08jnwlp)
Series 1

Episode 3

In this three-part drama-documentary series, Dan Snow explores the political intrigues and family betrayals between Vikings, Anglo-Saxons and Normans that led to war and the Battle of Hastings.

When the winds finally change, Duke William leads his vast invasion fleet across the Channel after months of being trapped in a port in northern France. But King Harold is 300 miles away in the north, having defeated the Vikings. He has to rush back south, gather a new army and head to Hastings to take on this new invasion. The two armies meet at battle in Sussex on 14 October 1066, and the outcome changes the shape of England and Europe forever.

WED 21:00 Mechanical Monsters (b0bdvzpj)
Simon Schaffer tells the stories behind some of the most extraordinary engineering wonders of the 19th century. These were gigantic feats of technology which transformed everyday life but also had the capacity to challenge the Victorians' faith in God, their place in the universe and their hopes for the future. Through stunning images of these beautiful creations, this film investigates the origins of our love-hate relationship with technology.

First, Simon visits the industrial landscape of Ironbridge in Shropshire to show how new technology of the early 19th century made possible the construction of monstrous machines. He examines a giant steam hammer which could crush a railway sleeper but could also be controlled so precisely that it could crack the shell of an egg and keep the egg intact.

Throughout the film, Simon shows how technological breakthroughs inspired and elevated the Victorians but also unsettled and threatened them. Machines drove the British Empire and held apparently infinite potential, but they were also terrifying - they replaced workers by carrying out their jobs more efficiently, they polluted the environment, and they dwarfed life on a human scale.

Simon tells the story of Charles Babbage, who spent many years devising astonishing calculating engines, effectively giant computers made out of cogs and gears, intended to carry out error-free mathematical processes.

In a park in south London, Simon finds the original Jurassic Park of the Victorian era. Opened in the grounds of the Crystal Palace exhibition in 1854, it was a display featuring life-sized replica dinosaurs, designed to show visitors what dinosaurs may have looked like.

Visiting Birr in central Ireland, Simon comes face to face with the Leviathan. Completed in 1845 in the grounds of an aristocrat's castle, it was a giant telescope designed to crack the mysteries of the skies.

Simon also tells the story of William and Margaret Huggins, who were pioneers in a new scientific method which used beautifully constructed instruments to analyse the wavelengths of light of distant objects, and at an observatory in Hampshire, we see how modern astronomers carry out the same procedures.

Back in London, Simon tells the story of the great stink of 1858, ie how a population boom led to the Thames overflowing

with human sewage. He visits Crossness Pumping Station on the banks of the river - an astonishing example of Victorian architecture.

Simon ends his tale of mechanical monsters by investigating the strange story of a machine that never existed except in the heads of its creators. It was a device dreamed up at the end of the 19th century by the famous science fiction writer HG Wells, in concert with an instrument maker called Robert Paul. Their plan was to build a time machine - not a machine which could actually travel through time, but one which would harness revolutionary new technologies to give a paying audience the experience of what time travel might actually be like. As Simon shows, although the time machine was never actually built, it played an extraordinary and unexpected role in the birth of British cinema.

WED 22:00 Timeshift (b0803m60)
Series 16

Bridging the Gap: How the Severn Bridge Was Built

2016 saw the 50th anniversary of the Severn Bridge, which completed the motorway link between England and Wales. Timeshift tells the inside story of the design and construction of 'the most perfect suspension bridge in the world', and how its unique slimline structure arose by accident.

WED 23:00 Timeshift (b080dvy)
Series 16

Sailors, Ships & Stevedores: The Story of British Docks

Throughout the 20th century, Britain's docks were the heartbeat of the nation - bustling, exciting and often dangerous places where exotic goods, people and influences from across the globe ebbed and flowed and connected Britain with the wider world. Thousands of men, with jobs handed down from father to son through generations, sustained these emblems of national pride, typified by London, the hub of the British Empire.

The waterside cities within cities where they lived and worked formed the frontier of the country's postwar recovery. Communities connected to the sea grew around them, some as unique as the multicultural sailortown of Tiger Bay in Cardiff, others like Liverpool primed for a new wave of world fame thanks to the music and style being brought into the country by the city's seafarers. The 1960s heralded the arrival of new forms of technological innovation in our ports, and thanks to a simple metal box, the traditional world of dockside would be radically transformed, but not without a fierce struggle to protect the dock work that many saw as their birthright.

Today, docksides are places of cultural consumption, no longer identifiable as places that once forged Britain's global standing through goods and trade. People visit waterfronts at their leisure in bars, cafes and marinas or buy a slice of waterside living in converted warehouses and buildings built on the connection to the sea. While the business of docks has moved out of sight, over 95 per cent of national trade still passes through the container yard on ever-larger ships. However, it is still possible to glimpse the vanished dockside through the archive films and first-hand stories of those who knew it best.

Narrated by Sue Johnston.

WED 00:00 The Secrets of Quantum Physics (b04tr9x9)
Einstein's Nightmare

Professor Jim Al-Khalili traces the story of arguably the most important, accurate and yet perplexing scientific theory ever - quantum physics.

The story starts at the beginning of the 20th century with scientists trying to better understand how light bulbs work. This simple question led them deep into the hidden workings of matter, into the sub-atomic building blocks of the world around us. Here they discovered phenomena unlike any encountered before - a realm where things can be in many places at once, where chance and probability call the shots and where reality appears to only truly exist when we observe it.

Albert Einstein hated the idea that nature, at its most fundamental level, is governed by chance. Jim reveals how, in the 1930s, Einstein thought he had found a fatal flaw in quantum physics, because it implies that sub-atomic particles can communicate faster than light in defiance of the theory of relativity.

For 30 years, his ideas were ignored. Then, in the 1960s, a brilliant scientist from Northern Ireland called John Bell showed there was a way to test if Einstein was right and quantum mechanics was actually mistaken. In a laboratory in Oxford, Jim repeats this critical experiment. Does reality really exist or do we conjure it into existence by the act of observation?

The results are shocking!

WED 01:00 The Secrets of Quantum Physics (b04v85cj)
Let There Be Life

Physicist Jim Al-Khalili routinely deals with the strangest subject in all of science - quantum physics, the astonishing and perplexing theory of sub-atomic particles. But now he's turning his attention to the world of nature. Can quantum mechanics explain the greatest mysteries in biology?

His first encounter is with the robin. This familiar little bird turns out to navigate using one of the most bizarre effects in physics - quantum entanglement, a process which seems to defy common sense. Even Albert Einstein himself could not believe it.

Jim finds that even the most personal of human experiences - our sense of smell - is touched by ethereal quantum vibrations. According to the latest experiments, it seems that our quantum noses are listening to smells. Jim then discovers that the most famous law of quantum physics - the uncertainty principle - is obeyed by plants and trees as they capture sunlight during the vital process of photosynthesis.

Finally, Jim asks if quantum physics might play a role in evolution. Could the strange laws of the sub-atomic world, which allow objects to tunnel through impassable barriers in defiance of common sense, effect the mechanism by which living species evolve?

WED 02:00 Bunkers, Brutalism and Bloodmindedness: Concrete Poetry with Jonathan Meades (b03vrpbc)
Episode 1

Two-part documentary in which Jonathan Meades makes the case for 20th-century concrete Brutalist architecture in an homage to a style that he sees as a brave, bold and bloody-minded. Tracing its precursors to the once-hated Victorian edifices described as Modern Gothic and before that to the unapologetic baroque visions created by John Vanbrugh, as well as the martial architecture of World War II, Meades celebrates the emergence of the Brutalist spirit in his usual provocative and incisive style. Never pulling his punches, Meades praises a moment in architecture he considers sublime and decries its detractors.

WED 03:00 1066: A Year to Conquer England (b08jnwlp)
[Repeat of broadcast at 20:00 today]

THURSDAY 09 AUGUST 2018

THU 19:00 World News Today (b0bdvfh)
The latest national and international news, exploring the day's events from a global perspective.

THU 19:30 Top of the Pops (b0bf989z)
Janice Long and Mike Read present the pop chart programme, first broadcast on 20 February 1986. Featuring Paul Hardcastle, Diana Ross, Depeche Mode, Survivor, Public Image Limited, Billy Ocean and The Damned.

THU 20:00 Australia with Simon Reeve (b02fpp2)
Episode 3

Simon travels down the east coast to the magnificent cities of Sydney and Melbourne in the final part of his journey.

First, he visits Surfers Paradise near the city of Gold Coast, the Las Vegas of Australia. Behind the sun and surf, this area has become the country's organised crime capital. Police are cracking down on outlaw motorcycle clubs, accused of being criminal gangs. Simon meets the most notorious and feared biker group in Australia to hear their side of the story.

In the wealthy east coast suburbs, he has a different kind of encounter, joining a vet and his team who rescue and treat injured koalas - thousands of which are killed each year by cars and pet dogs.

Arriving in Sydney, Simon discovers a city of huge cultural diversity closely linked to its booming Asian neighbours, India and China. One in ten Aussies are now of Asian origin. Simon gauges Australia's attitude to immigration and meets the country's first Muslim ladies Aussie rules football team.

On the very last stretch of the journey, he takes to the air to witness the devastating and deadly bush fires ripping through the country, before reaching his final destination, Melbourne, just in time to celebrate Australia Day.

THU 21:00 Super Senses: The Secret Power of Animals (p024g1nl)
Sound

Our human senses are pretty incredible - but we only see, hear and smell a tiny fraction of what's out there. There is a hidden world that animals across the globe can experience.

Presenters Helen Czerski and Patrick Aryee journey through the world of sound - from the deepest rumbles to the highest squeaks. Using specialised technology, they experience sounds beyond the range of our human hearing.

This episode reveals how alligators use low-pitch rumbles to make the water around them dance and shows what it is like to be a bat and to see with sound. Also, Helen and Patrick convert a classic camper van into a giant speaker to conduct the ultimate hearing test for a herd of elephants.

THU 22:00 In Search of Science (b03c8mn1)
Clear Blue Skies

Professor Brian Cox guides viewers through 350 years of British science to reveal what science really is, who the people are who practise it, and how it is inextricably linked to the past, present and future of each and every one of us.

British science has a long track record of accidental discoveries improving our lot. Wondering why the sky is blue helped British scientists crack bacterial infection, whilst looking for a way to make quinine helped make our world a much more colourful place, as it led to the discovery of the first synthetic organic dye. But is this the best way to carry on?

Professor Brian Cox ends his homage to British science by looking at how discoveries are made, asking whether it is better to let the scientists do their own thing, and hope for happy accidents, or to only back scientific winners at the risk of missing the occasional gems.

THU 23:00 The Great British Year (p01dfmb)
Original Series

Autumn

The fading sun brings an energy change to Britain - a time of storms and unpredictable weather. The trees go dormant, but not before a final fling of colour. For animals, the shortening days are a cue to prepare, hibernating and hoarding for the dark times ahead. For some, it's still a time to breed - deer rut, seals give birth and the Atlantic salmon leaps waterfalls in order to lay its eggs. Beneath the fallen leaves, slime moulds, earthworms and fungi take advantage of autumn's spoils.

THU 00:00 Top of the Pops (b0bf989z)
[Repeat of broadcast at 19:30 today]

THU 00:30 Mechanical Monsters (b0bdvzpj)
[Repeat of broadcast at 21:00 on Wednesday]

THU 01:30 Australia with Simon Reeve (b02vfpp2)
[Repeat of broadcast at 20:00 today]

THU 02:30 The Rules of Abstraction with Matthew Collings (b04gy5kl)

Documentary in which painter and critic Matthew Collings charts the rise of abstract art over the last 100 years, whilst trying to answer a set of basic questions that many people have about this often-baffling art form. How do we respond to abstract art when we see it? Is it supposed to be hard or easy? When abstract artists chuck paint about with abandon, what does it mean? Does abstract art stand for something or is it supposed to be understood as just itself?

These might be thought of as unanswerable questions, but by looking at key historical figures and exploring the private world of abstract artists today, Collings shows that there are, in fact, answers.

Living artists in the programme create art in front of the camera using techniques that seem outrageously free, but through his friendly-yet-probing interview style Collings immediately establishes that the work always has a firm rationale. When Collings visits 92-year-old Bert Irvin in his studio in Stepney, east London, he finds that the colourful works continue experiments in perceptual ideas about colour and space first established by abstract art pioneers such as Paul Klee and Wassily Kandinsky in the 1910s.

Other historic artists featured in the programme include the notorious Jackson Pollock, the maker of drip paintings, and Mark Rothko, whose abstractions often consist of nothing but large expanses of red. Collings explains the inner structure of

such works. It turns out there are hidden rules to abstraction that viewers of this intriguing, groundbreaking programme may never have expected.

FRIDAY 10 AUGUST 2018

FRI 19:00 World News Today (b0bdvhg6)

The latest national and international news, exploring the day's events from a global perspective.

FRI 19:30 BBC Proms (b0bf7ygd)
2018

Brahms Requiem

The Rev Richard Coles introduces a performance of Brahms's tender and consoling A German Requiem, inspired by the death of the composer's mother. Richard Farnes conducts the BBC Symphony Orchestra and Chorus, with soloists Golda Schultz, making her Prom debut, and Johan Reuter. The evening starts by marking Thea Musgrave's 90th birthday with her dramatic and mysterious single-movement piece Phoenix Rising.

FRI 21:15 TOTP2 (b007897x)
70s Special

A 'then and now' special featuring a number of 1970s artistes as they were in 2002. As well as archive footage, the show also includes previously unseen performances by Donny Osmond, David Cassidy, Page and Plant and Alice Cooper.

FRI 22:00 Elvis: The Rebirth of the King (b09kkkxb)

The widely accepted Elvis narrative is that the Vegas period was the nadir of his career, but this film argues that Elvis reached his peak both as a singer and performer in the first few years of his Vegas period. He became, in those short years, the greatest performer on earth. The film tracks this five-year renaissance with some of his key musical and artistic collaborators of the period, including the creator of his most memorable jumpsuits, to celebrate the greatest pop reinvention of all time.

FRI 23:00 BBC Proms (b0bf7ygg)
2018

New York Now

An eclectic mix of musicians with rich New York roots join Jules Buckley and the Heritage Orchestra at the Royal Albert Hall to celebrate the changing soundscape of the Big Apple. Folk indie rocker Sharon Van Etten, nu-disco dance project Hercules & Love Affair and progressive pop artist serpentwithfeet take us from pagan-gospel and disco-punk to feminist rap and DIY indie in one of this season's most distinctive Proms.

FRI 00:25 Great American Rock Anthems: Turn it up to 11 (b03n2w37)

It's the sound of the heartland, of the midwest and the industrial cities, born in the early 70s by kids who had grown up in the 60s and were now ready to make their own noise, to come of age in the bars, arenas and stadiums of the US of A. Out of blues and prog and glam and early metal, a distinct American rock hybrid started to emerge across the country courtesy of Alice Cooper, Grand Funk Railroad et al, and at its very heart is The Great American Rock Anthem.

At the dawn of the 70s American rock stopped looking for a revolution and started looking for a good time; enter the classic American rock anthem - big drums, a soaring guitar, a huge chorus and screaming solos. This film celebrates the evolution of the American rock anthem during its glory years between 1970 and 1990 as it became a staple of the emerging stadium rock and AOR radio and then MTV.

From School's Out and Don't Fear the Reaper to Livin' on a Prayer and Smells Like Teen Spirit, these are the songs that were the soundtrack to teenage lives in the US and around the world, anthems that had people singing out loud with arms and lighters aloft.

Huey Morgan narrates the story of some of the greatest American rock anthems and tracks the emergence of this distinct American rock of the 70s and 80s. Anthems explored include School's Out, We're an American Band, Don't Fear the Reaper, Paradise by the Dashboard Light, I Love Rock 'n' Roll, Eye of the Tiger, I Want to Know What Love Is, Livin' on a Prayer and Smells Like Teen Spirit.

Contributors include: Alice Cooper, Dave Grohl, Butch Vig, Meat Loaf, Todd Rundgren, Richie Sambora, Blue Oyster Cult, Survivor, Toto and Foreigner.

FRI 01:20 Tom Waits: Tales from a Cracked Jukebox (b08g8hj3)

Tom Waits is one of the most original musicians of the last five decades. Renowned for his gravelly voice and dazzling mix of musical styles, he's also one of modern music's most enigmatic and influential artists.

His songs have been covered by Bruce Springsteen, Rod Stewart and Norah Jones, among many others. But Waits has always pursued his own creative vision, with little concern for musical fashion.

In a long career of restless reinvention, from the barfly poet of his early albums to the junkyard ringmaster of Swordfishtrombones, his songs chronicle lives from the margins of American society - drifters, dreamers, hobos and hoodlums - and his music draws on a rich mix of influences, including the blues, jazz, Weimar cabaret and film noir.

Using rare archive, audio recordings and interviews, this film is a bewitching after-hours trip through the surreal, moonlit world of Waits' music - a portrait of a pioneering musician and his unique, alternative American songbook.

FRI 02:20 Elvis: The Rebirth of the King (b09kkkxb)
[Repeat of broadcast at 22:00 today]

FRI 03:15 TOTP2 (b007897x)
[Repeat of broadcast at 21:15 today]