

SATURDAY 13 APRIL 2019

SAT 19:00 Great Bear Stakeout (p0176qr2)
Episode 2

In this episode, the world-famous salmon run arrives in Alaska. The bears must catch hundreds of these fish if they are to bulk up and survive the harsh winter months. We discover that young grizzly mum Parsnip and her cub Pushki have returned to the bay to feed on the salmon. But predatory adult bears will kill cubs and, with fierce competition, Parsnip must protect her cub and learn the skills of fishing if they are to both make it through hibernation.

As winter approaches, life gets more intense, survival gets tougher, and the threats get even greater.

SAT 20:00 Italy's Invisible Cities (b08cbkvr)
Series 1

Florence

Using the latest 3D scanning technology, Alexander Armstrong and Dr Michael Scott explore the romantic city of Florence.

They reveal how its wonderful facades and artworks mask a hidden story of intrigue and secrecy, and one powerful dynasty was behind it all - the Medicis, godfathers of the Renaissance. Finally, the scanning team build a virtual reality 3D model to reveal how the city's secret corridors of power were the foundation of its Renaissance glory.

SAT 21:00 Follow the Money (m000474n)
Series 3

Episode 3

Alf and his Task Force team are on the trail of the person they believe is responsible suspect in the basement deaths case, but tracking him proves more difficult than they expected. Alf is dissatisfied with his colleagues' performances, sparking internal disputes. Nicky tries to find his son, now living with a foster family, and is working out how to win him back. Anna finds herself in deep water as she attempts to be a financial adviser in the organised crime world, and soon crosses paths with Nicky.

In Danish with English subtitles.

SAT 21:55 Follow the Money (m000474q)
Series 3

Episode 4

Anna working for Nicky, laundering the money from his drug dealing through her job at the bank, and meets with potential lawyers from Dubai. Alf suspects that Nicky is involved in the basement deaths, and is the link to the mysterious Marco. However, Alf's boss wants him to focus on the drug smuggler they have in custody instead. The chief police inspector starts to show an interest in Alf's work in Task Force Nørrebro, which does not go down well with Storm. Nicky meets his son, Milas, for the first time in two years, visiting him at his foster family's home under the supervision of a social worker.

In Danish with English subtitles.

SAT 22:50 Arena (b0074prh)
Ken Dodd's Happiness

A tribute to Liverpoolian comic Ken Dodd, in which he discusses his career and the influences of his comedy style.

Features film clips of his early performances and footage of him on tour in more recent times.

SAT 23:50 Top of the Pops (m00042ky)
Gary Davies presents the pop chart programme, first broadcast 6 August 1987 and featuring New Order, Linda Ronstadt and James Ingram, Sinitta, Samantha Fox, Wet Wet Wet, Motley Crue, Def Leppard, Spagna, Los Lobos and Stock Aitken Waterman.

SAT 00:20 Top of the Pops (m000433j)
Peter Powell and Simon Bates present the pop chart programme, first broadcast on 13 August 1987 and featuring Def Leppard, Motley Crue, Rick Astley, Wet Wet Wet, Wax, Kim Wilde, Sherrick, The Jesus and Mary Chain, Pseudo Echo and Hue and Cry.

SAT 00:55 London Songs at the BBC (b01jxzfz)
A collection of performances from the BBC archives, celebrating the sights and sounds and the ups and downs of

London through the words and songs through the years - from Petula Clark singing A Foggy Day in London Town in 1965 to Adele performing her love letter to the city in Hometown Glory, filmed in October 2007 on the roof of the BBC car park in Shepherd's Bush. Also featured are the likes of The Jam, Eddy Grant, Tom Paxton and Lily Allen plus many more.

SAT 01:50 Great Bear Stakeout (p0176qr2)
[Repeat of broadcast at 19:00 today]

SAT 02:50 Italy's Invisible Cities (b08cbkvr)
[Repeat of broadcast at 20:00 today]

SUNDAY 14 APRIL 2019

SUN 19:00 Seven Ages of Starlight (p00yb434)
This is the epic story of the stars, and how discovering their tale has transformed our own understanding of the universe.

Once we thought the sun and stars were gods and giants. Now we know, in a way, our instincts were right. The stars do all have their own characters, histories and role in the cosmos. Not least, they played a vital part in creating us.

There are old, bloated red giants, capable of gobbling up planets in their orbit, explosive deaths - supernovae - that forge the building blocks of life and black holes, the most mysterious stellar tombstones. And, of course, stars in their prime, like our own sun.

Leading astronomers reveal how the grandest drama on tonight is the one playing above our heads.

SUN 20:30 The Sky at Night (m00048q5)
Marsquake!

Marsquake! This month's episode follows Insight, NASA's latest mission to the Red Planet, as it goes in search of the secrets buried deep below Mars's surface. By listening for tremors caused by Marsquakes and meteor strikes, scientists hope to reveal how the planet was formed, why its fate was so different from the Earth and whether the planet is dead or alive.

The programme also says a heartfelt goodbye to Opportunity, the rover that explored the surface of Mars for more than 14 years until it was engulfed by a dust storm last year.

SUN 21:00 Janet Baker - In Her Own Words (m00048q7)
In her first documentary for more than 35 years, the great British classical singer Dame Janet Baker talks more openly and emotionally than ever before about her career and her life today. With excerpts of her greatest stage roles (as Dido, Mary Stuart, Julius Caesar and Orpheus), as well as of her appearances in the concert hall and recording studio (works by Handel, Berlioz, Schubert, Elgar, Britten and Mahler), she looks back at the excitements and pitfalls of public performance.

She tells the film-maker John Bridcut about the traumatic loss of her elder brother when she was only ten years old, and how that experience coloured her voice and her artistry. She explains why she felt the need to retire early some thirty years ago and discusses the challenges she and her husband have to face in old age. She also gives tantalizing clues to the question her many fans often ask: does she still sing today at the age of 85?

Among the other contributors to the film are conductors Raymond Leppard, Jane Glover and André Previn (in one of his last interviews before his death in March), the singers Joyce DiDonato and Dame Felicity Lott, the opera producer John Copley, the pianist Imogen Cooper, and the actress Dame Patricia Routledge. This feature-length film is a Crux production for the BBC, following the award-winning 'Colin Davis - in His Own Words' in 2013. John Bridcut has also made film profiles of Herbert von Karajan, Mstislav Rostropovich, Rudolf Nureyev and Jonas Kaufmann, as well as 'Prince, Son and Heir: Charles at 70' for BBC One in November 2018.

SUN 22:30 Cold War, Hot Jets (b03h8r3y)
Episode 1

Britain emerged from the Second World War in financial crisis, but one technological innovation provided hope for the future - a world-leading jet aviation industry. During the Cold War, the jet engine became a lucrative export and a powerful piece of military hardware, but selling to the wrong buyer could alter the balance of power.

SUN 23:30 Storyville (b09c1rch)
The Work: Four Days to Redemption

Set inside one room in Folsom Prison in California, this film

follows three men from outside as they take part in a four-day group therapy retreat with convicts serving long sentences for violent or gang-related crimes including murder, assault and robbery.

Over four days, each man takes his turn at delving into his past. This experience exceeds their expectations, ripping them out of their comfort zones and forcing them to see themselves and the prisoners in unexpected ways. This film reveals a radical process of redemption and rehabilitation.

SUN 00:55 Timeshift (b019c85h)
Series 11

The Rules of Drinking

Timeshift digs into the archive to discover the unwritten rules that have governed the way we drink in Britain.

In the pubs and working men's clubs of the 40s and 50s there were strict customs governing who stood where. To be invited to sup at the bar was a rite of passage for many young men, and it took years for women to be accepted into these bastions of masculinity. As the country prospered and foreign travel became widely available, so new drinking habits were introduced as we discovered wine and, even more exotically, cocktails.

People began to drink at home as well as at work, where journalists typified a tradition of the liquid lunch. Advertising played its part as lager was first sold as a woman's drink and then the drink of choice for young men with a bit of disposable income. The rules changed and changed again, but they were always there - unwritten and unspoken, yet underwriting our complicated relationship with drinking.

SUN 01:55 Secret Knowledge (b054fkzz)
The Private Life of a Dolls' House

Lauren Child, author, illustrator and creator of Charlie and Lola, has a secret passion - dolls' houses. She has worked on her own dolls' house for the past 30 years and her lifelong obsession continues to inspire her ideas and shape her work. But why do these interior worlds have the power to cast a spell beyond childhood?

Lauren explores the history of dolls' houses from some of the earliest examples to their modern incarnations, speaks to craftspeople who create perfect miniatures and meets ardent collectors willing to pay big money for tiny objects of desire.

SUN 02:25 Seven Ages of Starlight (p00yb434)
[Repeat of broadcast at 19:00 today]

MONDAY 15 APRIL 2019

MON 19:00 Beyond 100 Days (m000474t)
Series 1

15/04/2019

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

MON 19:30 Secrets of Bones (b03x3zfs)
Into the Air

Ben Garrod finds out how the skeleton has allowed vertebrates to do the most remarkable thing of all - take to the air. He discovers why the humble pigeon is such an exceptional flier, uncovers bony secrets as to how the albatross makes mammoth migrations and finds out why some birds have dense bones. Finally, he reveals which surprising flier is his 'ultimate'.

MON 20:00 Empire of the Seas: How the Navy Forged the Modern World (b00qfyw)
Series 1

High Tide

In the third programme in this epic four-part series on how the Navy has shaped modern Britain, Dan Snow sheds light on the evolution of Nelson's navy in the late 18th century. It was the most powerful maritime fighting force in the world, with highly trained crews and ambitious officers. He explores the national enterprise which supported it, and explains how the empire it helped create put Britain on the path to war with France.

Through the stories of naval heroes like Captain Cook, naval administrators like Charles Middleton and of course Admiral Nelson, Snow explores the elite training, the growing naval meritocracy and the years of tough experience which created a

ruthless and professional 'band of brothers'. He looks at the impact of innovations such as the copper bottoming of the navy's ships and the introduction of a new tax - income tax - to pay for the fleet.

Pushing back the boundaries of the known world, the Navy's highly trained crews and ambitious officers laid claim to a burgeoning empire, but at a huge price. By 1800, Britain had been dragged into the greatest sequence of wars the nation had ever seen.

MON 21:00 Operation Stonehenge: What Lies Beneath (b04j29ht)
Episode 2

Operation Stonehenge follows a group of international archaeologists, led by the University of Birmingham and the Ludwig Boltzmann Institute in Vienna and supported by new research from English Heritage. Part two of this mini-series turns its focus to the construction, design and enduring significance of the iconic stone circle itself and the ancient civilisation that flourished around it.

Solving many of the mysteries of Stonehenge, revelations include the discovery of new monuments in the landscape, the most definitive understanding to date of how the monument looked in its heyday, the precise geometric mastery that dictated its design and solar alignment, and tantalising new evidence of how the megaliths were transported to the site and elaborately finished by skilled engineers and stonemasons.

Precise CGI reconstructions reveal not just an enigmatic circle of stones, but the crowning achievement and epicentre of a highly sophisticated civilisation that had mastered deep mining, international trade, precision engineering, intricate gold working and state-of-the-art metallurgy, alongside complex astronomy and mathematics.

MON 22:00 Hidden Killers (b050d700)
The Tudor Home

Dr Suzannah Lipscomb takes us back to Tudor times in search of the household killers of the era.

It was a great age of exploration and science where adventurers returned from the New World with exotic goods previously unknown in Europe. An era in which the newly emergent middle classes had, for the first time, money for luxuries and early consumer goods, many of which contained hidden dangers.

The period also saw a radical evolution in the very idea of 'home'. For the likes of Tudor merchants, their houses became multi-room structures instead of the single-room habitations that had been the norm (aristocracy excepted). This forced the homebuilders of the day to engineer radical new design solutions and technologies, some of which were lethal.

Suzannah discovers that in Tudor houses the threat of a grisly, unpleasant death was never far away in a world (and a home) still mired in the grime and filth of the medieval period - and she shows how we still live with the legacy of some of these killers today.

MON 23:00 World's Greatest Food Markets (b04sxzn2)
Mexico

Following a dream of visiting and trading in the world's greatest food markets, Billingsgate fish merchant Roger Barton heads to Mexico City's Central de Abasto, the largest food market on the planet. In feeding one of the world's biggest megacities, ten billion US dollars flow through each year. He's got his work cut out winning over the market as there's not a single fish in sight.

MON 00:00 Pedalling Dreams: The Raleigh Story (b08j8mvl)

For the last 150 years, Britain has been a nation of bike lovers. And for much of that time, one make has been associated with quality, innovation and Britishness - Raleigh bikes.

Born in the back streets of Nottingham in 1888, Raleigh grew to become the biggest bicycle manufacturer in the world. For over a century, the company was known for its simple and practical bikes, built to last a lifetime. For generations, its designs were thought second to none, enjoyed by adults and children alike.

Now, with wonderful personal testimony and rare and previously unseen archive film, this documentary tells the extraordinary tale of the ups and downs of Raleigh bikes - a beautifully illustrated story full of remarkable characters, epic adventures and memorable bikes.

Meet the people who rode and raced them, the workers who built them and the dealers who sold them. Find out how cycling saved the life of Raleigh's founder, discover the technological

advances behind the company's success and join Raleigh bike riders who recall epic adventures far and wide.

Along the way, the programme takes viewers on a journey back to cycling's golden age - rediscover the thrill of learning to ride your first bike and find out what went on inside the Raleigh factory, where the company's craftsmen produced some of Britain's most iconic bikes.

Finally, the documentary reveals what went wrong at Raleigh - the battles it had with its rivals, the controversy behind the design of the Chopper and the effect the closure of its factories had on its loyal workers. This is the extraordinary untold story of the rise and fall of Raleigh bikes.

MON 01:00 Dan Snow on Lloyd George: My Great-Great-Grandfather (b08411s9)

At the end of the First World War, Britain's prime minister David Lloyd George was a national hero, hailed as 'the man who won the war'. A hundred years after he became PM, Lloyd George's great-great-grandson Dan Snow explores his famous forebear's life and asks why he's not better remembered, why he's not as famous a wartime leader as his friend and protege Winston Churchill. It's a tale of sex and scandal, success and failure, with Dan discovering some home truths from his family's history.

Dan's journey starts in north Wales in the village of Llanystumdwy, where Lloyd George was raised by his uncle after his father's death. It's an area Dan knows well from childhood holidays visiting his grandmother. He climbs Moel y Gest, a rocky outcrop overlooking the sea, a view virtually unchanged since Lloyd George's day. Taking the Ffestiniog railway up into the mountains Dan travels in Lloyd George's own railway carriage, reputedly a place when he would enjoy some private time with his secretary.

Like Lloyd George, Dan journeys from Wales to Parliament, filming in the House of Commons where his ancestor made such an impact. Initially Lloyd George was a radical Liberal, causing outrage by opposing the Boer War in 1899, but ten years later he was chancellor of the exchequer, introducing some of the most important legislation of the early 20th century. His budget of 1909 brought in national insurance and old age pensions and, as his biographer Roy Hattersley tells Dan, laid the foundations of the welfare state.

When Britain went to war in August 1914, Lloyd George was a pivotal member of the cabinet. Historian Margaret Macmillan, an expert on the First World War and another descendant of Lloyd George, points out that if he'd come out against the war the Liberal government would have fallen. Once war was declared Lloyd George was important in recruiting the new citizen's army, making speeches across the country. But in private he was making sure his sons didn't volunteer straightaway, another example of Lloyd George's double dealing.

Lloyd George's private life is as famous as his politics. Before the war he had a string of affairs, but by 1914 he was involved with his secretary Frances Stevenson. Half his age, she was a pioneering female civil servant and a constant companion during the First World War. Meeting her biographer John Campbell, Dan discovers some shocking secrets about their relationship during the war years.

Lloyd George's most significant work in the early years of the war was in munitions production. Britain, like all the other warring countries, was running out of shells. He revolutionised the war economy, creating a huge workforce, including many women, to produce the vast numbers of guns and ammunition needed to wage total war. Dan visits an engineering works in north Wales which in 1917 was turned over to armaments production.

But Lloyd George's dynamism wasn't reflected in the rest of the government, especially the prime minister Herbert Asquith. At the end of 1916 after the failure of the Somme, matters came to a head and Asquith was forced to resign to be replaced by Lloyd George. He was the first man from such humble origins to become prime minister.

In spring 1918, the Germans broke through and almost reached Paris, but the Allies fought back. This is when Lloyd George's war machine came into the effect - the huge amount of munitions he helped create, along with the newly arrived American troops, forced the German army into retreat, finally signing the Armistice on 11 November 1918.

In 1918, Lloyd George was wildly popular and re-elected by a landslide, but his postwar career was less successful. Dan visits the Hall of Mirrors at the Palace of Versailles where Lloyd George signed the famous treaty, but many think that this fuelled German resentment and led to the Second World War 20 years later. At home, the 'land fit for heroes' which Lloyd George had promised didn't materialise and there was a postwar slump. When it was revealed that he'd sold honours to fund his Liberal Party his days were numbered, and he was finally

ousted by his Conservative coalition partners in 1922.

Until his death in 1945 Lloyd George was a figure in the wilderness, never returned to power and further damaging his reputation with an ill-advised visit to Hitler in 1936. He was, as Dan concludes, a flawed hero, but one from whom he's proud to be descended.

MON 02:00 How to Build... a Nuclear Submarine (b00sy1w)

Fourteen years in the making and costing over a billion pounds, the Astute nuclear submarine is one of the most technologically advanced machines in the world, and for over a year the BBC filmed its construction inside one of the most secure and secret places in the country.

An amazing piece of British engineering or a controversial waste of tax payers' money? This documentary allows viewers to make up their own minds.

Among many of the workers, the film features Erin Browne, a 19-year-old apprentice electrician who wires up the boat; Commander Paul Knight, responsible for the safety of the nuclear reactor; and Derek Parker, whose job involves moving massive pieces of the submarine that weigh hundreds of tons into position before the welding team join them together.

Amazing computer graphics take us inside the construction of the submarine itself, giving a blueprint of the design, the life support systems and the weaponry, and help illustrate the areas that national security precluded filming in.

The story also takes a dramatic turn when an unforeseen event means the submarine has to sail into the open sea - for the first time - during one of the wettest and windiest weekends of the year.

MON 03:00 Hidden Killers (b050d700)
[Repeat of broadcast at 22:00 today]

TUESDAY 16 APRIL 2019

TUE 19:00 Beyond 100 Days (m000474w)
Series 1

16/04/2019

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

TUE 19:30 Secrets of Bones (b03xsgwh)
Sensing the World

Ben Garrod delves into the surprising ways in which bone has evolved to help vertebrates sense the world around them. He reveals why predators like the wolf have eyes at the front of their skull whereas prey animals such as sheep usually have eye sockets on the sides of their heads. He finds out how the skull of the great grey owl has helped it develop such extraordinary hearing and uncovers the secret behind one bizarre creature's uniquely flexible nose.

TUE 20:00 Blue Planet II (b09g4d98)
Series 1

Coral Reefs

Corals build themselves homes of limestone in the warm, clear, shallow seas of the tropics. Their reefs occupy less than one tenth of one per cent of the ocean floor, yet they are home to a quarter of all known marine species. They are complex, infinitely varied structures providing all kinds of homes for their many residents. There is fierce rivalry for space, for food and for a partner, but the reef is also a place full of opportunity. For those that manage to establish themselves, there can be great rewards.

The broadclub cuttlefish has found its place by using a hypnotic display that apparently mesmerises its prey, causing it to let down its defences. On the Great Barrier Reef a remarkable grouper uses sign language, dubbed the headstand signal, to reach out to an entirely different creature, a reef octopus, to flush small fish out of their hiding holes and into the groupers waiting mouth.

While they might appear to be nothing more than rocky substrate, each coral is in fact made up of hundreds to thousands of tiny, living coral creatures called polyps. Filmed with super macro time-lapse, we bring them to life and reveal their hidden worlds. As these polyps grow and die they lay the limestone foundation for civilisations and superstructures so large that they can be seen from space.

Coral reef cities never sleep, they are constantly noisy worlds where a chorus of submarine song rings out from their many inhabitants. At dawn, one of the reef's most charismatic inhabitants, the green turtle, heads off to be cleaned at a special health spa. As she approaches the station, she is joined by more of her fellow turtles and is pushed out by the queue-jumping males. She must wait for her opportunity to sneak back in.

Some animals come to reefs for rest and relaxation. In the desert sands of Egypt, coral reefs thrive in the shallows of the Red Sea, providing bottlenose dolphins with a place to rest. For the youngsters, the reef is their playground. These dolphins play by balancing corals and sponges on their nose and in doing so build important life skills.

Every reef has a sharply defined boundary. On the outer side, facing the open ocean, is the drop-off. These ramparts protect the city from the ocean waves, but twice a day the walls are covered by the incoming tide. In the Bahamas, the rush of the water creates a truly strange phenomenon - a whirlpool. In the Maldives, on the biggest tides, one particular coral lagoon becomes so flooded with plankton that it attracts hundreds of manta rays.

On the sheltered side of the reef there are sand flats which provide rich feeding grounds. However, away from the protective structures of the reef there is nowhere to hide. This makes it a dangerous place, especially at night when predators patrol in search of prey caught in the open. The bobbit, a giant carnivorous worm, buries deep in the sand in order to ambush unsuspecting prey. But there is safe accommodation for some out here in these sandy suburbs. An extraordinary species of clownfish has made a home in an anemone away from the reef. But it is up to the big male to find a way for the female to lay her eggs.

Reef creatures go to great lengths to give their young a head start in life and nowhere more so than on the remotest reefs in the world. In French Polynesia, thousands of grouper risk death when faced with hundreds of grey reef sharks in order to reproduce.

Despite their longevity and resilience, increasing ocean temperatures have put coral reefs under unprecedented pressure. The most devastating bleaching event known in recorded history wreaks havoc on the Great Barrier Reef in Australia. Without the three-dimensional structure of a coral reef, all reef dwellers are affected. The programme unfolds with one of the greatest mass-spawning events in the oceans - corals, fish and invertebrates all releasing a snowstorm of eggs. By sending their young away from the reef, there is hope that they will regenerate new reefs and secure their future for generations to come.

TUE 21:00 Looking for Rembrandt (m000474y)
Series 1

Episode 2

As Rembrandt paints his most iconic work, *The Night Watch*, his wife Saskia lies dying. Her death begins a ten-year decline in Rembrandt's output as he pours himself into etching instead. Many etchings are erotically charged, perhaps a result of an affair he has begun with his infant son's nursemaid. However, that relationship ends with her being committed to a house of correction - a punishment Rembrandt himself apparently played a role in. These moral and sexual ambiguities bleed into other works. Although he finds new love and happiness with a new housemaid, he finds that he has become Amsterdam's most notorious marital embarrassment.

Further shame comes for Rembrandt in 1656 as his debts become unmanageable. No longer able to make enough money from his paintings now that he is starting to fall out of favour and fashion, Rembrandt declares bankruptcy. It is an act that will come to define him even in the centuries after his death.

TUE 22:00 Julian Assange: Risk (b095vnpX)
Cornered in a tiny building for half a decade, Julian Assange, the founder of Wikileaks, is undeterred even as the legal jeopardy he faces threatens to undermine the organisation he leads and fracture the movement he inspired.

Filmed over six years, this story is captured with unprecedented access by Laura Poitras, the Academy Award-winning director of *Citizenfour*, who finds herself caught between the motives and contradictions of Assange and his inner circle.

In a new world order where a single keystroke can alter history, *Risk* is a portrait of power, betrayal, truth and sacrifice.

TUE 23:30 Turtle, Eagle, Cheetah: A Slow Odyssey (m0001ks4)
An Eagle's Flight

Take a flight on a summer morning with a white-tailed eagle

around Scotland's west coast. A falconry-trained sea eagle wearing a specially designed on-board camera is the only way to glimpse the lives of these rare and protected species. From the high tops of Crois Bheinn on the remote Morvern Peninsula, the eagle traverses across beautiful rolling moors and glens, along craggy cliff faces and finally ventures towards the Sound of Mull. With a two-metre wingspan, it is the biggest bird around - but that doesn't stop it being challenged by noisy crows and ravens. After its long flight, the hungry eagle is finally drawn down to the coast by the promise of a fish. Flying through torrential rain, it dives at over 100mph to grab the fish from a coastal pool before being reunited with its handler.

TUE 00:00 Dissected (p01mv2rj)
The Incredible Human Foot

In a purpose-built dissection lab, Dr George McGavin is joined by leading anatomy experts to dissect a real foot, taking it apart layer by layer to reveal what makes it unique in the animal kingdom. We discover the incredible natural engineering that is key to our greatest physical achievements, from a baby's first steps to a ballerina on pointe.

TUE 01:00 Roger Bannister: Everest on the Track (b07lxs4s)

On 6 May 1954, Roger Bannister became the first man to run a mile in under four minutes. He was the epitome of Britain's disappearing scholar-athlete ideal.

The lunchtime-trained runner, immersed in his medical school studies, injected a booster shot into Britain's flagging but still flickering morale. This documentary is as much an historical study of Britain's search for something to erase the woes of the Second World War as it is a fresh look at the story of the quest for the first four-minute mile, previously deemed physically impossible. The story is told by Sir Roger himself, his rival John Landy, Seb Coe and the late Chris Chataway - Bannister's friend and pacesetter - among many others.

TUE 02:00 Blue Planet II (b09g4d98)
[Repeat of broadcast at 20:00 today]

TUE 03:00 Looking for Rembrandt (m000474y)
[Repeat of broadcast at 21:00 today]

WEDNESDAY 17 APRIL 2019

WED 19:00 Beyond 100 Days (m0004754)
Series 1

17/04/2019

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

WED 19:30 Secrets of Bones (b03yfqj6)
Food for Thought

Ben Garrod uncovers the secrets of how vertebrates capture and devour their food using extreme jaws, bizarre teeth and specialised bony tools. He takes a cherry picker up a sperm whale's jaw and finds out which animal has teeth weighing five kilos each and which uses its skull as a suction pump. Ben gets his own skull scanned and 3D-printed to discover how diet in humans isn't just affecting our waistlines but is also changing the shape of our bones.

WED 20:00 Kolkata with Sue Perkins (p02z81fq)
Sue Perkins immerses herself in the complex life of Kolkata. She sees first-hand how it has evolved from a place notorious for its fabled 'Black Hole' dungeon and the dreadful poverty of its street people to a place reinventing itself as a vibrant new megacity, with a booming property sector and a reputation for eccentricity, culture and tolerance.

In this intricate human habitat, Sue explores the lives of its people, from the 250,000 homeless street kids hustling for a living to the wealthy young entrepreneurs who race their Ferraris and Lamborghinis down the streets of the New Town.

She joins the rickshaw wallahs navigating the chaotic city streets and narrow lanes, thronged with people, and descends into Kolkata's Victorian sewers as part of an epic clean-up. She limbers up with the ladies of the Laughing Club and makes an offering to the goddess in the sacred Kalighat Temple.

No other city tells the remarkable story of India more clearly than the beautiful, crazy, colourful city of Kolkata. Through encounters with people from every strata of society, from the richest to the poorest, Sue paints a picture of contemporary India emerging from a brutal colonial past to take its place

among the most powerful nations on earth.

WED 21:00 Julius Caesar Revealed (b09s0mxj)
Julius Caesar is the most famous Roman of them all: brutal conqueror, dictator and victim of a gruesome assassination on the Ides of March 44 BC. 2,000 years on, he still shapes the world. He has given us some political slogans we still use today (*Crossing the Rubicon*), his name lives on in the month of July, and there is nothing new about Vladimir Putin's carefully cultivated military image, and no real novelty in Donald Trump's tweets and slogans.

Mary Beard is on a mission to uncover the real Caesar, and to challenge public perception. She seeks the answers to some big questions. How did he become a one-man ruler of Rome? How did he use spin and PR on his way to the top? Why was he killed? And she asks some equally intriguing little questions. How did he conceal his bald patch? Did he really die, as William Shakespeare put it, with the words *Et tu, Brute* on his lips? Above all, Mary explores his surprising legacy right up to the present day. Like it or not, Caesar is still present in our everyday lives, our language, and our politics. Many dictators since, not to mention some other less autocratic leaders, have learned the tricks of their trade from Julius Caesar.

WED 22:00 The Normans (b00tcgkl)
Men from the North

In the first episode of a three-part series, Professor Robert Bartlett explores how the Normans developed from a band of marauding Vikings into the formidable warriors who conquered England in 1066. He tells how the Normans established their new province of Normandy - 'land of the northmen' - in northern France. They went on to build some of the finest churches in Europe and turned into an unstoppable force of Christian knights and warriors, whose legacy is all around us to this day. Under the leadership of Duke William, the Normans expanded into the neighbouring provinces of northern France. But William's greatest achievement was the conquest of England in 1066. The Battle of Hastings marked the end of the Anglo-Saxon aristocracy and monarchy. The culture and politics of England would now be transformed by the Normans.

WED 23:00 Timeshift (b08lvtz6)
Series 17

Blazes and Brigades: The Story of the Fire Service

Timeshift looks back on nearly two centuries of British firefighting, and explores how major incidents and the evolution of equipment from manual pumps to motorised fire engines have helped forge the modern fire service.

The founding father of modern firefighting was Scotsman James Braidwood, whose pioneering techniques helped save Westminster Hall when the Houses of Parliament were consumed by fire in 1834. Remarkably, London had no publicly funded fire service at the time - and it was only after Braidwood's death tackling a warehouse blaze nearly 30 years later that the Metropolitan Fire Brigade was created.

The fireman soon became an iconic figure of heroism in Victorian painting and popular literature - but the provision of fire brigades and the standard of their equipment varied widely across the country. Motorised fire engines were available from the beginning of the 20th century, but it took the arrival of World War Two for the fire service to be organised on a national footing. Professional and volunteer firefighters worked side by side to tackle the devastating incendiary bombs dropped on British cities by the Nazis. Doug Lightning, the last surviving firefighter of the Sheffield Blitz in December 1940, recalls his own experience of helping to save key buildings during the attack.

In the post-war years, improvements to the fire service saw the introduction of new equipment, including the state-of-the-art Dennis F7 fire engine - we take one of the last surviving examples back on the road in Manchester. Firemen were also called on to help with non-fire-related disasters. Interviewee Brian Sadd recalls the exploits of his father Fred during the floods that hit the east coast of England in 1953. Fred rescued 27 people, was awarded the George Medal and became the star of a comic strip in *The Eagle*.

A series of tragic incidents in the 1960s raised awareness of the importance not just of tackling blazes but of fire prevention. However, Britain was unprepared for the record hot summer of 1976, when a series of fires swept through the countryside. We speak to Mary-Joy Langdon, who in volunteering to help became Britain's first female firefighter, heralding changes to what was once seen very much as a man's job.

But the service wasn't immune to the industrial unrest of the decade. 1977 saw once tight-knit teams divided by the first national firefighters' strike, the film explores the media and public reaction to this unprecedented event. With the strike

resolved, technology and equipment continued to improve in the 1980s, spurred on by a series of high-profile tragedies, culminating in the King's Cross underground station fire of November 1987, in which 31 people lost their lives, including one of the first firemen on the scene.

The King's Cross disaster led to a further overhaul of fire safety regulations. Today there are more than 50 regional fire services in the UK, dealing with nearly 2,000 call-outs a day. Increasingly, fewer of these are to actual fires. Firefighters respond to a range of incidents from road traffic accidents to terrorist attacks and natural disasters, and in recognition of this, in 2004 the service was officially renamed the Fire and Rescue Service.

WED 00:00 The Joy of Stats (b00wgq0l)

Documentary which takes viewers on a rollercoaster ride through the wonderful world of statistics to explore the remarkable power they have to change our understanding of the world, presented by superstar boffin Professor Hans Rosling, whose eye-opening, mind-expanding and funny online lectures have made him an international internet legend.

Rosling is a man who revels in the glorious nerdiness of statistics, and here he entertainingly explores their history, how they work mathematically and how they can be used in today's computer age to see the world as it really is, not just as we imagine it to be.

Rosling's lectures use huge quantities of public data to reveal the story of the world's past, present and future development. Now he tells the story of the world in 200 countries over 200 years using 120,000 numbers - in just four minutes.

The film also explores cutting-edge examples of statistics in action today. In San Francisco, a new app mashes up police department data with the city's street map to show what crime is being reported street by street, house by house, in near real-time. Every citizen can use it and the hidden patterns of their city are starkly revealed. Meanwhile, at Google HQ the machine translation project tries to translate between 57 languages, using lots of statistics and no linguists.

Despite its light and witty touch, the film nonetheless has a serious message - without statistics we are cast adrift on an ocean of confusion, but armed with stats we can take control of our lives, hold our rulers to account and see the world as it really is. What's more, Hans concludes, we can now collect and analyse such huge quantities of data and at such speeds that scientific method itself seems to be changing.

WED 01:00 Genius of the Ancient World (b064jf28)

Buddha

Historian Bettany Hughes embarks on an expedition to India, Greece and China on the trail of three giants of ancient philosophy: Buddha, Socrates and Confucius. All three physically travelled great distances philosophising as they went and drawing conclusions from their journeys. With Bettany as our guide, she gets under the skin of these three great minds and shines a light on the overlooked significance of the 5th century BC in shaping modern thought across the world. In this first episode, Bettany investigates the revolutionary ideas of the Buddha.

WED 02:00 Kolkata with Sue Perkins (p02z81fq)

[Repeat of broadcast at 20:00 today]

WED 03:00 Julius Caesar Revealed (b09s0mxj)

[Repeat of broadcast at 21:00 today]

THURSDAY 18 APRIL 2019

THU 19:00 Beyond 100 Days (m00047j6)

Series 1

18/04/2019

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

THU 19:30 The Sky at Night (m00048q5)

[Repeat of broadcast at 20:30 on Sunday]

THU 20:00 A History of Ancient Britain (b00z0k23)

Series 1

Age of Cosmology

Neil Oliver continues his journey through the world of Ancient Britain as he encounters an age of cosmological priests and

some of the greatest monuments of the Stone Age, including Stonehenge itself. This is a time of elite travellers, who were inventing the very idea of Heaven itself.

THU 21:00 Pipers of the Trenches (b046y9ld)

For four hundred years or more, Highland regiments advanced and attacked to the sound of the bagpipes. In the Great War, pipers climbed out of the trenches, unarmed, to face machine guns and shells. The descendants of those men return to the battlefields to discover individual stories of unparalleled bravery.

THU 22:00 Storyville (b00ptf7f)

The Age of Stupid

Drama-documentary-animation hybrid starring Oscar-nominated Pete Postlethwaite as a man living alone in the devastated world of 2055, watching archive footage from 2008 and asking why climate change wasn't stopped before it was too late.

THU 23:25 Horizon (b079s24p)

2016

Ice Station Antarctica

Antarctica is the last great wilderness. It's the coldest, windiest, driest and most isolated place on Earth. And every winter, for over three months of the year, the sun never rises. But it's also home to the British Antarctic Survey's Halley Research Station.

A veteran of living and working at Halley in the early eighties, BBC weatherman Peter Gibbs makes an emotional return to the place he once called home. A place that, during his time, was key to the discovery of the ozone hole.

The journey starts with an arduous 12-day, 3000-mile voyage onboard the RRS Ernest Shackleton. Once on the ice shelf, Peter is delighted to finally arrive at the futuristic research station and marvels at the cutting edge science being done at Halley today. From vital discoveries about how our lives are vulnerable to the sun's activities, to studying interplanetary travel and the threat of man-made climate change.

But Peter's journey is also something of a rescue mission. The research station's home is a floating ice shelf that constantly moves and cracks, and the ice shelf has developed a chasm that could cast Halley adrift on a massive iceberg.

THU 00:25 Chef v Science: The Ultimate Kitchen Challenge (b0752bbd)

Materialist scientist Professor Mark Miodownik challenges two-Michelin-star chef Marcus Wareing to the ultimate cookery competition. Over the course of 90 minutes they cook up some of the nation's best-loved dishes, from starter to dessert, in a head-to-head contest to see who can create the most flavoursome food. Marcus has flair, passion, and experience, while Mark an understanding of cooking at the molecular level and access to state-of-the-art technology. Ultimately the question they will try to answer is this: is cooking a science or an art?

THU 01:55 A History of Ancient Britain (b00z0k23)

[Repeat of broadcast at 20:00 today]

THU 02:55 The Normans (b00tcgkl)

[Repeat of broadcast at 22:00 on Wednesday]

FRIDAY 19 APRIL 2019

FRI 19:00 World News Today (m00048qg)

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

FRI 19:30 Top of the Pops (m00048qj)

Janice Long and Steve Wright present the pop chart programme, first broadcast on 20 August 1987 and featuring Wax, Five Star, Sherrick, Bon Jovi, Prince and Sheena Easton, The Smiths, Pet Shop Boys and Dusty Springfield, Sinitta and Spagna.

FRI 20:00 BBC Young Dancer (m00048ql)

2019

South Asian Dance Final

BBC Young Dancer returns for a third series as a showcase for the very best young dance talent in the UK. The competition is open to 16-21 year olds across four categories – South Asian,

Contemporary, Ballet and Street Dance.

Presented by Anita Rani and Ore Oduba, the series gets underway with the South Asian Final which features two of the most popular classical Indian Dance styles – Kathak and Bharatanatyam.

We meet the five dancers competing and follow them on their journey as they prepare for the category final, held at The Lowry, where they will be judged by a panel of experts: Bharatanatyam dancer, choreographer and film-maker Seeta Patel, leading Kathak artist Gauri Sharma Tripathi, and our adjudicator across all the categories, dancer, spoken word artist and director Jonzi D.

For one of the dancers a place in the Grand Final awaits, with the opportunity to dance on stage at one of Britain's leading dance venues, The Birmingham Hippodrome.

The South Asian Dance finalists are Aishani Ghosh, Mahika Gautam, Sundaresan Ramesh, Tulani Kayani-Skeef and Shree Savani.

FRI 21:00 Woody Guthrie: Three Chords and the Truth (m00048qp)

Woody Guthrie is one of America's legendary songwriters. A voice of the people, he wrote hard-hitting lyrics for a hard-hit nation.

His is a tale of survival, creativity and reinvention. He is proof that there is always potential for change and even in 2019, more than fifty years after his death, he is challenging Donald Trump from beyond the grave.

With enormous influence on successive generations of musicians like Bob Dylan, Bruce Springsteen, Joan Baez and Billy Bragg, this film proves he has a true place in 21st-century culture.

FRI 22:00 Top of the Pops (b08skpzz)

1984 - Big Hits

Celebrating the big hits from a big year in British pop. The big hitters in this compilation are performed by the likes of The Smiths, Duran Duran, Sade, The Weather Girls, Wham! and Bronski Beat, to name a few.

Further stellar appearances come from the TOTP debuts of iconic Americans Madonna, Miami Sound Machine and Cyndi Lauper, who runs riot in the studio.

Frankie Goes to Hollywood celebrate their 1984 chart dominance with one of their celebrated renditions of Two Tribes, while we couldn't let you forget a little ditty from Black Lace - you'll be singing this for days... you have been warned!

FRI 23:00 Totally 60s Psychedelic Rock at the BBC (b06jp24d)

A compilation from the depths of the BBC archive of the creme de la creme of 1960s British psychedelic rock from programmes such as Colour Me Pop, How It Is, Top of the Pops and Once More with Felix.

Featuring pre-rocker era Status Quo, a rustic-looking Incredible String Band, a youthful Donovan, a suitably eccentric performance from The Bonzo Dog Doo Dah Band, a trippy routine from Julie Driscoll, Brian Auger & The Trinity, a groovy tune from The Moody Blues, a raucous rendition by Joe Cocker of his version of With a Little Help From My Friends and some pre-Wizzard Roy Wood with The Move.

Plus classic performances from the likes of Procol Harum, Cream, Jimi Hendrix and The Who.

FRI 00:00 Top of the Pops (m00048qj)

[Repeat of broadcast at 19:30 today]

FRI 00:30 The Story of Funk: One Nation Under a Groove (b046nm5)

In the 1970s, America was one nation under a groove as an irresistible new style of music took hold of the country - funk. The music burst out of the black community at a time of self-discovery, struggle and social change. Funk reflected all of that. It has produced some of the most famous, eccentric and best-loved acts in the world - James Brown, Sly & the Family Stone, George Clinton's Funkadelic and Parliament, Kool & the Gang and Earth, Wind & Fire.

During the 1970s this fun, futuristic and freaky music changed the streets of America with its outrageous fashion, space-age vision and streetwise slang. But more than that, funk was a celebration of being black, providing a platform for a new philosophy, belief system and lifestyle that was able to unite young black Americans into taking pride in who they were.

Today, like blues and jazz, it is looked on as one of the great American musical cultures, its rhythms and hooks reverberating throughout popular music. Without it hip-hop wouldn't have happened. Dance music would have no groove. This documentary tells that story, exploring the music and artists who created a positive soundtrack at a negative time for African-Americans.

Includes interviews with George Clinton, Sly & the Family Stone, Earth, Wind & Fire, Kool & the Gang, War, Cameo, Ray Parker Jnr and trombonist Fred Wesley.

FRI 01:30 Woody Guthrie: Three Chords and the Truth (m00048qp)
[Repeat of broadcast at 21:00 today]

FRI 02:30 Top of the Pops (b08skpzg)
[Repeat of broadcast at 22:00 today]