OCEANS
Our Blue Planet

	OCEANS – OUR BLUE PLANET
1.35	Untamable, and mighty….
1.46	… The oceans are our last true wilderness… They cover 70% of the surface of our planet
2.04	Their power can fill us with awe….
2.11	…..and at times fear.
2.42	But today we are also beginning to reveal their hidden wonders.
2.57	Off the wild coast of South Africa, bottlenose dolphins face some of the roughest seas on earth.
3.13	But for them, big waves are an opportunity for play.
3.26	And why do they do it? To build friendships and strengthen family bonds.
3.40	And also for the sheer joy of it.
3.59	There is so much more to discover about our oceans… and their importance to us.
4.10	Over 40% of us live within 60 miles of the sea ….. but it is still the least known part of our planet.
4.27	Today scientists and filmmakers are heading out to explore the seven seas.
4.43	Equipped with the latest technology, their mission is to bring us a new understanding of life beneath the waves.
5:00	

	At a time when the health of our oceans is increasingly under threat, this has never been more urgent.
5.27	Our journey begins in the warm clear shallow seas of the tropics…
5.37	Home to coral reefs
6.04	They occupy less than one percent of the ocean floor, yet they are home to a quarter of all marine species.
6.23	Competition is fierce in these crowded underwater cities
6.41	We are learning just how noisy they are - with state of the art underwater microphones.
7.07	Amazingly, fish can talk to each other
7.26	But sometimes it's better to stay quiet!
7.43	On Australia's Great Barrier Reef, one character is challenging our understanding of fish intelligence.
7.55	This is a tusk fish. He does something few would have believed a fish could do.
8.06	Every morning he makes a journey out to the edge of the reef.
8.25	He is looking for breakfast.
8.46	A clam
8.51	But how to crack it open and get to the meat inside?
9.01	He carries it all the way back to his special kitchen….
9.11	a bowl-shaped coral …
9.16	…with a particular bump inside that he always uses.
9.32	It's not easy, if you have no hands!

9.42	Oops - dropped it again.
9.57	But he's got great determination.
10.07	At last!
10.11	So here's a fish that uses a tool! Some fish are much cleverer than we ever thought.
10.18	
10.36	Even ocean creatures that we already knew were smart are continuing to surprise us.
10.52	This bottlenose dolphin mum is about to teach her calf an important lesson, here in the Red Sea.
11.13	She leads him to a particular bush-like coral, called a gorgonian. The family rub themselves through the fronds.
11.25	The calf is watching … and learning. Gorgonian fronds are covered with a mucus that can have anti-inflammatory and anti-microbial properties ….
11.34	… So maybe the dolphins are doing this to protect themselves from infection.
11.52	The calf may be too young to join in but his family's secret knowledge of the coral reef is teaching us to search for new medicines here too.
12.03	
12.20	

13.13	As we leave the tropics and head into cooler waters, we enter the temperate seas.
	These are home to mysterious undersea forests.
13.20	Giant kelp - a sea weed - towers 200 feet high … growing two feet a day under the summer sunshine.
13.41	Marine plants are the lungs of our planet. They pump out as much oxygen as all the forests and grassy plains on land.
14.05	Within their tangled undergrowth, extraordinary discoveries await…
	In the shark-filled kelp forests of Southern Africa, lives one brave little octopus.
14.21	Pyjama sharks are every octopus's worst nightmare…
14.43	But the octopus has a trick up her sleeve:
	In a behaviour previously unknown to science, she disguises herself with shells ... creating a suit of armour.
14.59	The shark can sense its prey … but the shells protect her.
15.16	Superior wits allow this octopus to stay alive.
15.30	But just as we are getting to know these forests we're recognizing their vulnerability.
	Off North America's Pacific coast, great stands of kelp are being felled….
15.50	… by armies of ravenous sea urchins.
	They munch through the roots with razor sharp teeth.
16.19	But some kelp forests here have unlikely guardians …
16.45	Sea otters.

16.58 **17.06** **17.16** **17.31** **17.48** **17.56** **18.21** **18.55** **19.04** **19.39**	Because they live their entire lives in such cool waters, they need to eat 30% of their bodyweight a day to stay warm. One of their favourite foods is sea urchin. By removing the urchins, the otters allow the forests to flourish. And, with all this food, they're having a baby boom Now, in a few remote areas, sea otters are creating vast rafts…. in numbers not seen for more than a century.
20.14 **20.26** **20.38**	As we leave our coasts and head for the high seas, we enter the Open Ocean. Covering over half our planet's surface, it's the world's greatest wilderness A vast empty void where there's nowhere to hide and little to eat. And yet it's home to vast numbers of dolphins ….

	Spinner dolphins.
20.59	They sweep this marine desert for food in a super pod 5000 strong.
21.15	…and they're leading this research vessel, to a rare feeding event.
	But to find it, they have to be fast.
21.28	Using echolocation, they lock onto their prey.
21.47	Great shoals of lantern fish.
21.55	By pinning the school against the surface the dolphins keep this fleeting opportunity alive.
	But all this food attracts other predators. Yellow fin tuna.
22.08	They rip through the lanternfish in a whirling carousel, at 40 miles an hour.
22.17	Now the sea begins to boil.
22.58	Finally mobula rays, with 10-foot wingspans, swoop in.
	In just 15 minutes, all that's left is a silvery confetti of scales.
23.12	These fleeting events are becoming rarer as we continue to overfish our high seas.
23.27	
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24.01	
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24.46	
25.15 **25.20** **25.49** **26.04** **26.20** **26.46** **26.53** **27.19** **27.31**	The open ocean may be featureless… But isolated volcanic peaks rise abruptly from deep water, hinting at a secret world below. The deep ocean is as challenging to explore as space. We know more about the surface of Mars than we do about the deep sea. Now, from the research vessel "Alucia", we can dive these uncharted depths to discover our final frontier. As we descend, the pressure increases relentlessly … Six hundred feet down, we enter an alien world: The Twilight Zone A pyrosome – a tube of jelly, six feet long. And stranger still … Barrel Eye. A fish with a transparent head, so that it can look up through its skull.
27.59 **28.18**	Eventually we reach the deep sea floor… a layer of mud, in places a mile thick. Over time, the mud here slowly decays…. creating volcanos of methane gas. The Deep may be hostile, but it's also home to the weird and wonderful.

29.12	Dancing crabs … called yetis because of their hairy arms, on which they farm bacteria to eat!
29.23	A dumbo octopus…. With ear like fins to hover above the muddy sea floor.
29.48	There are also corals here. With more species than on shallow tropical reefs.
30.08	Astonishingly we're now finding there's more life down here than anywhere else on earth!
30.18	This may seem an alien world but we are more closely connected to the Deep than we ever thought possible.
30.36	Thanks to great ocean currents.
30.50	
31.05	These begin at the frozen poles.
31.13	Here, in Antarctica, the surface waters are so cold and heavy that they sink…
31.30	That creates immense rivers of water that flow into the deep, where they power a global network of currents.
31.55	These currents flow from the frozen poles to the warm tropics, and back again, linking every ocean.
	They redistribute heat around the planet … maintaining a climate favourable for life on earth.
	From producing the oxygen we breathe to controlling our weather, the oceans are our life support system.

32.09 **32.24**	
32.42 **32.58** **33.10** **33.27** **33.44** **33.52** **34.00** **34.42** **34.54** **35.14** **35.27**	But just as we're discovering how dependent we are on the oceans, there are worrying signs that they are warming at a faster rate than ever before in human history. And nowhere is this more extreme than in the Arctic. Walrus prefer to rest on sea ice, but with less ice than ever before, hundreds of quarrelsome mothers now have to haul out on dry land. It's far from an ideal nursery. Nor is it safe from polar bears. A full-grown male walrus is too big for a bear to tackle. So it's looking for a walrus baby. This young mother needs to find somewhere for her pup to rest. The only safe places are the last remaining pieces of floating ice. The trouble is, that they're slippery… And wobbly… …and some walrus pups are just too heavy. The best icebergs are already full. It only takes another one ton mum…. to tip the balance! Finding a safe place on these melting shores becomes harder and harder.

35.36 **35.48** **36.04** **36.50** **37.34** **38.02**	Solving these problems together helps create a bond so strong that the mother and her youngster will stay in contact for the rest of their lives. Just as we're beginning to understand the sophisticated lives of sea creatures, so we begin to recognize the fragility of their home.
38.26 **38.49** **39.11**	As we explore every part of the remote seas, and meet astonishing animals, we've begun to appreciate the importance of our oceans. There has never been a more crucial time to continue this journey of discovery, because our future too depends on a healthy Blue Planet. And who knows what other secrets are out there, waiting to be discovered.