

Kohoutek 2021

Activities

We are very excited to share our Kohoutek 2021 Under the Sea activities with you! You will be able to find these as a pdf to download from your portal on our website!

There are a few things for you to do now and some guidance for the competition;

1. Take a look through the activities booklet (We have a mixture of creative, physical and mental activities for your young people).
2. Pick 4 activities (of course you are welcome to use as many of the activities as you like, but pick 4 to send in scores for as part of the competition).
3. Decide on teams of 5 members or under. (we appreciate that you may not be able to make exact teams of 5, so 4/5 is best, we will ask you to tell us how big the teams were when you submit scores so we can level the scores based on team size where appropriate).
4. Play the activities with your teams. You have the whole of March to do so. The activities are short enough that you could play 4 (all going smoothly) in one meeting night, or you could play one game per week throughout March.
5. Submit your scores. You will be able to do this through your portal on our website. Make sure to keep a record during your meetings of each teams score. The deadline for submitting scores will be the 5th of April.

6. Buy some badges! Badge orders for this year and previous years are already open.

You will see that many of our activities require you to share your screen, so if you are using breakout rooms, make sure to allow multiple participants to screen share at once in your zoom settings. You will also see that some activities can be done by all the teams simultaneously, and others have to be done in breakout rooms. We have tried to give you as much choice here so that you can combine them into your virtual meeting easily.

We hope that you and your scouts/guides enjoy taking part in Kohoutek 2021!

The Kohoutek Team

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Search the Seven Seas

Base Description:

Word based treasure hunt using What3Words and google maps

Activity Instructions:

Part 1: Young People will solve word puzzles to find words, those words will then correspond to a place on what3words and they must submit the answer to a question that can be found

There are 3 pairs of clues so if you have 3 groups they can each do a different puzzle.

Once they have completed part one they can move onto part 2.

Part 2: Answer the questions to get you from sea themed location to sea themed location. You will need to use google maps, but your knowledge and some googling should get you the answers. Take some time explore the street view at the last location if you can!

You have 10 minutes to complete the hunt.

Equipment needed:

Instruction sheet with the puzzles (below)

Access to What3words – either via app or website

How to score:

Part 1: 3 points for each word found

Bonus 7 for naming each of the body of water

Part 2: 3 Points for each location you get to

Bonus 7 point for finishing in under 3 minutes, bonus 4 points for finishing in under 5 minutes, bonus 2 points for finishing within the 7 minutes.

Risk Assessment:

Use your normal risk assessment for online meetings.

Part 1 - Puzzle 1

Identify what bodies of water these are the what3words locations for.

/// _____.

///	- - - - - / - - - / - - - / - - - / - - - / - - - /	A _____: She sells sea shells by the sea shore	.. . : ; . . ;
///	: ; . : ; ; ; ;	Anagram: swelters	Zulu India Tango Hotel Echo Romeo

A	B	C	D	E	F	G	H	I	J	K	L	M
·	:	··	···	···	···	···	···	···	···	··	··	···
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
···	···	···	···	···	···	···	··	··	··	··	··	···

A	· -	J	· - - -	S	···
B	-	K	- · -	T	-
C	- · - ·	L	· - - -	U	·· -
D	- · -	M	- -	V	·· - -
E	·	N	- · -	W	· - - -
F	- - - ·	O	- - - -	X	- · - -
G	- - -	P	· - - -	Y	- - - -
H	Q	- - - -	Z	- - - -
I	..	R	- - -		

Part 1 - Puzzle 2

Identify what bodies of water these are the what3words locations for.

/// _____.

///	Yankee Echo Lima Papa	:· · : · · : · · : · · : · ·	Anagram: gaga twist
///	:· · : · · : · · : · ·	- - - - / - / .. / - . / - - - / .. /	W___: Dance in 3/4 time

A	B	C	D	E	F	G	H	I	J	K	L	M
·	:	··	··:	···	····	·····	······	·······	········	·········	··········	···········
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
··	···	····	·····	······	·······	········	·········	··········	···········	············	·············	··············

A ..	J ····	S ...
B -... .	K -..	T -
C -... .	L ·... .	U ...
D -... .	M --.	V ...
E ·	N --.	W ...
F ...- .	O -··-	X -... .
G -... .	P ·... .	Y -... .
H	Q -... .	Z -... .
I ..	R ·.. .	

Part 1 - Puzzle 3

Identify what bodies of water these are the what3words locations for.

///_____

///	Z_____: American courgette	Lima Echo Alpha Kilo Echo Delta	Anagram: dipper tins
///	:: :; ;: ;: ::	:: :; :: ;: ;:	- - - . / - - - / - - / - - - . / - - . / .. / .. / .. / - - - /

A	B	C	D	E	F	G	H	I	J	K	L	M
.	:	..	:
;	;	;	;	;	;	;	;	;	;	;	;	;
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
;	;	;	;	;	;	;	;	;	;	;	;	;

A	--	J	----	S	...
B	K	--	T	-
C	- - - .	L	- - -	U	.. -
D	- - - .	M	--	V	... -
E	.	N	--	W	---
F	- - - .	O	----	X	... -
G	- - - .	P	- - - .	Y	--- -
H	Q	- - - .	Z	--- -
I	..	R	--		

Part 2

Location 1: What statue shares a name with a Disney film about a girl called Ariel?

What year was the statue created? 19_3

Location 2: 5_.45086, -2.59903

What is the postcode for this attraction: BS1 _TT

Location 3: _0.59427, -4.83000

What is the dialling code for the village? 0_208

Location 4: 51.46901, __.61407

What is the postcode for this sea food restaurant? BS8 _ RS

Location 5: 51.44352, __.86398

In what year was this Grade 1 listed Pier opened? 1_6 9

Location 6: -13._08133,146.5807969

What year were the “street view” images here capture?

Race to the pole

Base Description:

As adventurers travelling across the ocean to the South Pole, you will need to wrap up warm. How many items of clothing can you put on in 30 seconds?

Activity Instructions:

Can be run in breakout rooms or in the main room all together, or one team after the other. Team members will be given **3 minutes** to go and collect clothes from their rooms. The leader will then start a timer for **30 seconds**, the team members have to put on as many clothes as possible (the clothes they have on when they start don't count, but they must start the challenge decent). When time is up, the team has to take off and count all of the clothes they had just put on. The team total is then added up.

Equipment needed:

A way of timing the game (leader)
Clothes (young people)

How to score:

Items of clothing total	4	6	8	10	12	15	18	22	25	29	33	37
Points	5	10	15	20	25	27	30	32	35	36	37	38
Items of clothing total	40	43	46	49	52	55	58	61	64	66	68	70
Points	39	40	41	42	43	44	45	46	47	48	49	50

Risk Assessment:

Use your normal risk assessment for online meetings.

Tower Building

Base Description:

Race to build a tower.

Activity Instructions:

Teams get 5 minutes to discuss strategy. The leader will then start a timer. The team members will take it in turns to build a tower that is the same height as them out of at least 4 items (cannot use furniture). The time stops when the last team member has completed their tower.

Equipment needed:

Timer (leader)

Various household objects (young people)

How to score:

Points	5	10	15	20	25	30	32	34
Time	<15 min	<10 min	<4min 30 s	<3 min	<2 min 30s	<2 min	<1min 30s	<1min 15s
Points	36	38	40	42	44	46	48	50
Time	<1min	<45s	<35s	<30s	<27s	<25s	<20s	<15s

Risk Assessment:

Use your normal risk assessment for online meetings.

Team members should be careful of tower falling down, and not balance heavy items that could cause harm if toppled.

Kims Game

Base Description:

Teams play Kim's Game.

Activity Instructions:

Leaders can use the supporting pdf. Each page will have a selection of items on it. Before starting, give the teams this hint: The key to success is in the detail. The teams will have 30 seconds to memorise as many items as they can. Then leaders then remove the image and wait for a minute (the young people are not allowed to write down the items at any point). The young people then have up to 2 minutes to name all of the items on the tray by shouting them out and being ticked off by a leader. Leaders can ask questions to prompt bonus answers such as 'What colour was that object?' once an object has been named for example.

We suggest that you run this in breakout rooms virtually, if you have more than one team in a break-out room they can take turns, using a different set of items for each team.

30 seconds for seeing the picture

1 minute to forget everything

2 minutes to name as much as possible

(Sets #1 and #2 do not have any overlapping objects, so can be used where two teams are in the same breakout room if needed.)

Equipment needed:

Activity sheet attached with pdfs (there will be multiple so that you can re-run if there is time, and for more than one team).

How to score:

See scoring sheet in answers booklet.

Risk Assessment:

Follow normal risk assessment for an online activity.

Photo 1



Photo 2



Photo 3



Buried Treasure

Base Description:

You know that there is buried treasure somewhere on this island, however you want to avoid being bitten by crabs along the beach. Can you make it safely to X marks the spot?

Activity Instructions:

The aim of the game is to move around the beach (a 6x6 grid) to reach the treasure (X), starting from the point labelled (START). Players may move up, down, left or right, but cannot move diagonally. The scoring is based on time, so after the instructions have been read out, the leader should start a timer.

The leader should share their screen and have a blank copy of the grid up (there are 4 blank grids with accompanying solutions in the attached document). The players will then take it in turns to try to get to X marks the spot. If they hit a crab the leader tells them there is a crab on that grid square (RED on the solutions grid) and that's the end of their go. The next player now takes their go. They have to try to remember which route was safe before and which squares have crabs on them. Keep going round the players until they successfully reach the X.

Note that the teams will not be able to write down their moves during the game, they as a team must remember which squares on the grid are unsafe.

Equipment needed:

Attached activity sheets.

Timer.

How to score:

Points	50	45	40	35	30	25	20	15	10	5
Time	<15s	<30s	<40s	<50s	<60s	<1min 15s	<1min 30s	<2min	<3min	>3min

Risk Assessment:

Use normal risk assessment for an online meeting.

#1 BLANK

START						A
						B
						C
						D
		X				E
						F
1	2	3	4	5	6	

#2 BLANK

					START	A
						B
						C
				X		D
						E
						F
1	2	3	4	5	6	

#3 BLANK

						A
						B
				X		C
						D
						E
START						F
1	2	3	4	5	6	

#4 BLANK

						A
						B
						C
			X			D
						E
			START			F
1	2	3	4	5	6	

Clip 2 - watch from whole embedded time duration of this: <https://www.youtube.com/embed/0a8HGJid-Jo?start=0&end=101>

1. What type of whale is it? (2 points)
2. What is causing the buildup of toxic chemicals? (3 points)
3. How old was the calf? (2 points)
4. Theme question: What may have killed the whale calf? (2 points)

Clip 2 - watch from whole embedded time duration of this: <https://www.youtube.com/embed/NQu-153MnGQ?start=47&end=113>

5. What is the octopus's name? (3 points)
6. What kind of creature shouts "INCOMING"? (3 points)
7. What reason does Marlin give not to trust Becky? (4 points)
8. What's the aquarium exhibit which the octopus carries Dory across called? (6 points)
9. What has one big eye, tentacles and a snappy thing? (2 points)
10. Theme question: What does the octopus pick Dory up in? (3 points)

Clip 3 - watch the first 30 seconds: https://www.youtube.com/watch?v=KvJDEQbH5Rc&ab_channel=NathanEvanss

11. Is the skull on the flag wearing its eye patch on its left or right eye? (5 points)
12. How many weeks from shore were they? (2 points)
13. What colour is the puppet that appears immediately before Captain Jack Sparrow? (6 points)
14. Theme question: What was the ship called? (2 points)

15. Final question: how do the theme questions link? (5 points)

Crossword

Base Description:

Sea-themed crossword

Activity Instructions:

Team has 10 minutes to complete the crossword together, no googling allowed and then answer the question about the shaded letters.

[Here](#) is an a spreadsheet version you can download and fill in.

Equipment needed:

Timer, crossword spreadsheet

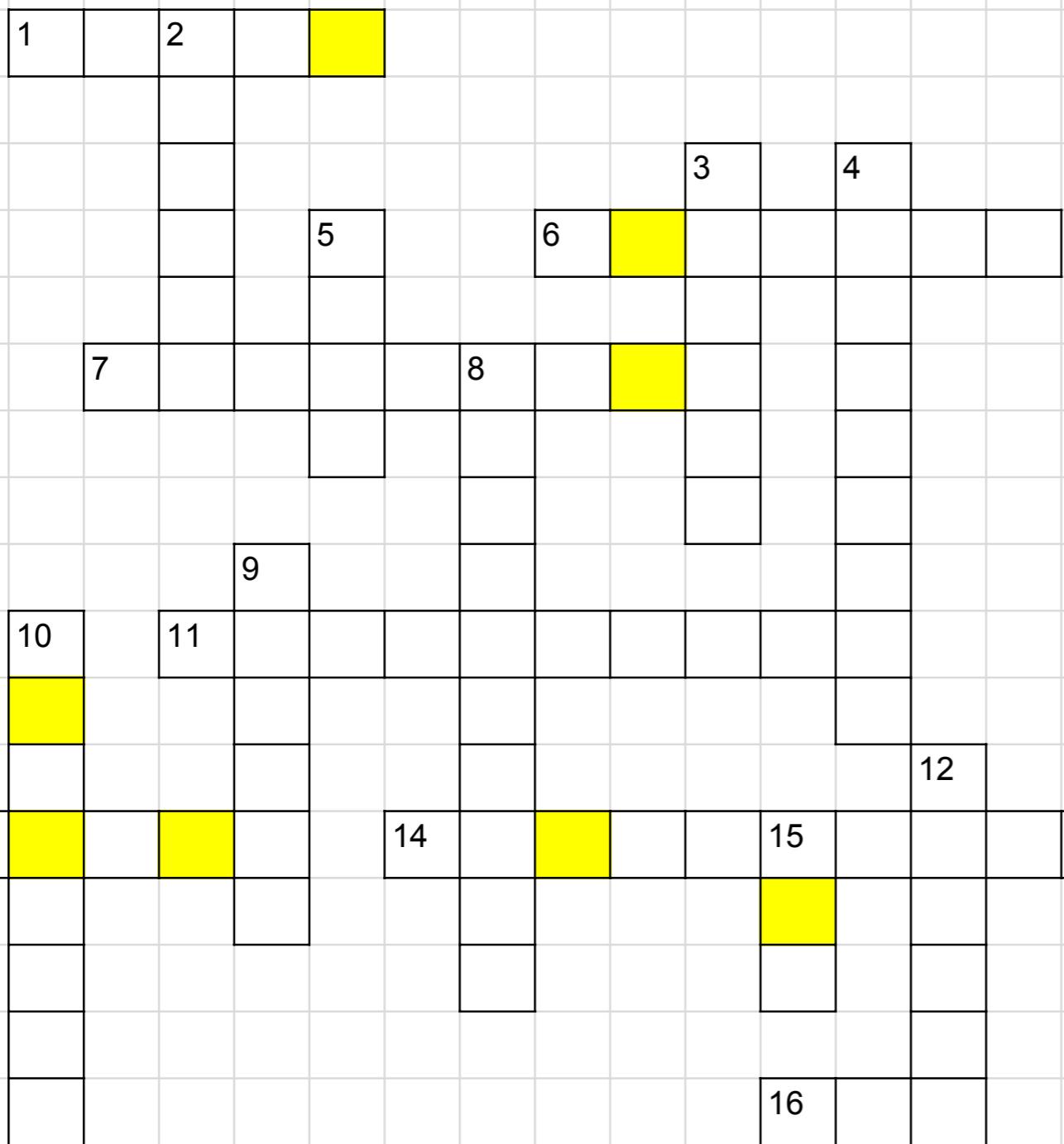
How to score:

2.5 point per word (round up if total isn't a whole number)

10 bonus points for correct answer to question about shaded letters

Risk Assessment:

Use normal risk assessment for an online meeting.



Across:

- WW2 German Submarine (1-4)
- The Welsh make this into laverbread (7)
- B in SCUBA (9)
- Cornish folk band: _____ Friends (10)
- Current location around a fish (6)
- Europe's 8th busiest port, located in Suffolk (10)
- Small powerful steam vessel for towing (3)

Down:

- Pearl-producing shellfish (6)
- Campfire song: _____ I would like to go with you,
I would like to sail the ocean blue (6)
- Campfire song: three blind _____ (9)
- Nebula named for a crustacean (4)
- Type of shark found in a toolbox (10)
- Smoked breakfast fish (6)
- "The pond" is this ocean (8)
- Propelling using oars (6)
- Lost? All at _____ (3)

Highlighted letters: Name a sea creature that has this bodypart

Underwater Scene

Base Description:

Create an underwater scene as a whole group out of whatever items they have lying around the house to tell a story e.g different team members make different parts of a submarine: One makes a periscope out of toilet roll tubes, one makes a cabin and some others make some passengers and explain that they're a bunch of marine biologists investigating deep sea life

Activity Instructions:

Participants discuss as a team what scene to make and what story their scene might tell and who will make which parts (3 minutes)

Collect/build items for the scene or story (3 minutes)

Put it all together and prepare to present (2 minutes)

Present story/scene to leader (2 minutes)

Equipment needed:

Whatever household items they have at hand - creative use of them is key

How to score:

Up to 20 points for coherent story and participation across the team

Up to 15 points for creative use of household items

Up to 15 points for link to theme

Risk Assessment:

Use normal risk assessment for an online meeting.

Origami Fish

Base Description:

Making origami fish

Activity Instructions:

Each team member to attempt to make and decorate an origami fish, average score will be taken so teamwork and helping each other understand the instructions will be important

Instructions are on the page below, with a YouTube video [here](#).

These instructions were taken from the British museum website and more information about the fish can be found [here](#).

Equipment needed:

Paper

Pens/pencils to decorate

How to score:

Score each team member's fish as below and then take the average (mean) score

Up to 20 points for neatness of folds

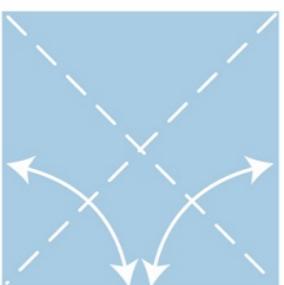
Up to 15 points for decoration

Up to 15 points for resemblance to a fish

Risk Assessment:

Paper cuts

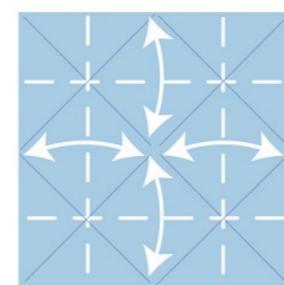
Use normal risk assessment for an online meeting.



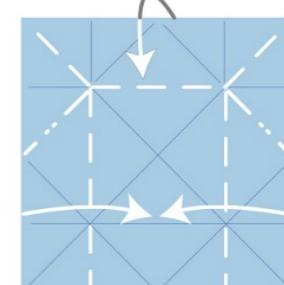
1. Start with the plain side facing up. Crease and unfold both diagonals. Turn over.



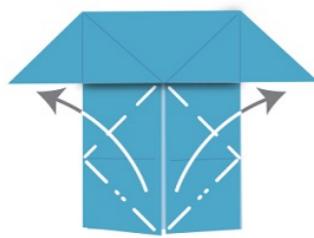
2. Fold each corner to the centre, crease and unfold. Turn over.



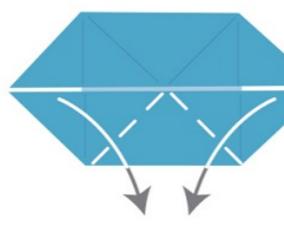
3. Fold each outer edge to the centre, crease and unfold.



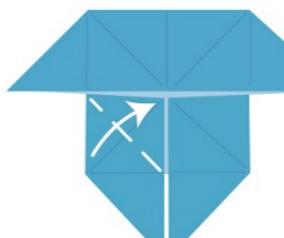
4. Fold the sides inwards as you fold the upper edge down. Push against the folds to collapse the paper inwards along the creases.



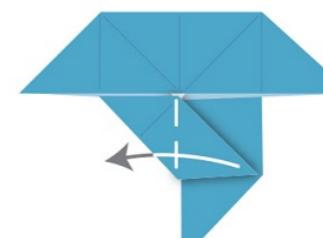
5. Repeat on the lower edge.



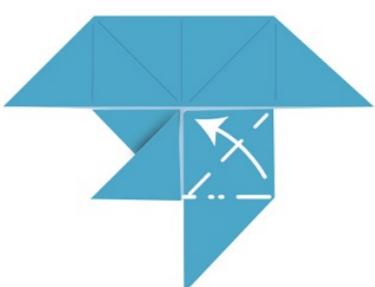
6. Fold the two lower flaps down to meet in the middle.



7. Fold the lower left flap up to the right.



8. Fold the same flap back on itself to the left.



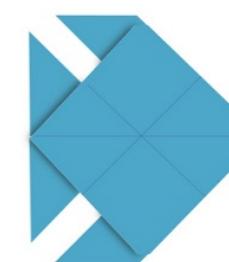
9. Repeat the last two steps on the right side.



10. Leaving a small gap, fold the upper flaps diagonally down to meet in the middle.



11. This is the result. Turn over and rotate.



12. Now your fish is finished!

Turtley Awesome Quiz

Base Description:

Series of questions based on 3 WWF posters.

Activity Instructions:

There will be 5 questions on turtles, 5 questions on penguins and 5 questions on polar bears. Each question will be worth 3 points each. The young people will have 3 minutes to look at the three posters to familiarise themselves and then they have the remaining time to answer the questions (they can use the posters still).

All the activity poster are from the WWF Youth Groups Website

Equipment needed:

Attached posters and questions

How to score:

3 points for each question answered correctly.

Bonus 5 points if they managed to answer all the questions in 5 minutes or under.

Risk Assessment:

Use normal risk assessment for an online meeting.

TURTLES

Get the lowdown on why they're so remarkable, and so important to our planet.

GREEN

Dark black-brown turtles named after their greenish cartilage and internal fat deposits. Found in most tropical and subtropical regions, some as far north as British coastal areas.

Females follow coastlines to lay up to 6 clutches of 70-110 eggs. They feed on algae and seagrasses.

Status - ENDANGERED



OLIVE RIDLEY

Smaller ones have slight upturns on their shells. Wide-ranging in population and nest sites - from Angola on the west coast of Africa to Venezuela in South America. Current population of around 800,000 nesting females is a tiny remainder of a population ravaged by hunting for meat, leather and illegal egg harvesting. They eat crabs, shrimps, jellyfish, small invertebrates and fish eggs.

Status - VULNERABLE



LOGGERHEAD

Large heads and powerful jaws, and a reddish-brown shell which collects barnacles - up to 100 species of animals and plants can live on just one turtle! Eat molluscs like conches and clams as well as crabs, urchins, sponges and jellyfish.

Status - ENDANGERED



KEMPS RIDLEY

The most endangered of all marine turtles with an almost round shell and a parrot-like beak. They have a restricted range, nesting only along a single stretch of coastline in the Gulf of Mexico, so have fallen foul of hunting, egg exploitation and habitat destruction. Only around 1,000 breeding females left. They nest every two years, laying 3 clutches of 90 eggs in a season.

Status - CRITICALLY ENDANGERED



HAWKSBILL

Long, oval shells, hawk-like beaks and two claws on their flippers. Females nest on secluded beaches in dunes or beach vegetation and lay up to 200 eggs in 2-5 clutches per season. Using their narrow beaks to reach inside crevices, they eat small invertebrates and love sponges, which grow on coral reefs.

Status - CRITICALLY ENDANGERED



LEATHERBACK

The largest marine turtle, reaching nearly 2m and up to 500kg and with a leathery, rather than hard shell, and long front flippers. They live in temperate and tropical waters, and can cross the Atlantic and Pacific oceans to breed. Females lay up to 120 eggs in 4-5 clutches every couple of years. Their eat jellyfish, squid and other soft invertebrates.

Status - VULNERABLE

FLATBACK

Flat shells up to 1m long and varying from yellow-green to grey. They feed on squid, molluscs, sea cucumbers and soft corals in Australasia's coastal waters. They only nest off northern Australia, on a number of small islands, which makes them vulnerable to habitat loss. They lay about 50 eggs four times in a season.

Status - IUCN DOESN'T HAVE ENOUGH INFORMATION ON THIS SPECIES



THREATS

Habitat loss

Uncontrolled coastal development has helped destroy important nesting beaches for all turtles. When humans build sea walls and jetties, we change long-shore drift patterns, causing coastlines and beaches to erode and disappear. Lights from new roads and buildings near beaches and coastlines attract new turtle hatchlings and disorient them away from the sea. More coastal development means less room for breeding turtles - hawksbills like to nest under vegetation, but if beaches are cleared for building, their nest sites can disappear altogether.

Hunting and poaching

Each year, 50,000 marine turtles are killed illegally in Southeast Asia and the South Pacific. Take green turtles - they're targeted for their meat, eggs and the special green body fat, called calipee, which is the main ingredient in turtle soup: over 30,000 are poached every year off the US coast of California. Turtle eggs are taken from nests to sell as snacks and are even considered an aphrodisiac in some countries.

Illegal wildlife trade

Tortoiseshell, calipee and leather from all turtle species are still popular in many parts of the world. In Japan, people have coveted hawksbill turtle shell, known as bekko, for hundreds of years and still do, even though it became illegal in 1994.

Fishing bycatch

All too often, turtles become enmeshed in fishing nets, trapped on longlines or caught in traps and pots. Some 200,000 loggerhead turtles were accidentally caught in longlines in 2000 - it's the main cause of their decline. Circle hooks, with inward-turning hooks, can reduce the number of turtles caught by a massive 80%, but only a tiny number of fishing vessels actually use them. Turtle deaths have been reduced by the wider use of excluder devices in shrimp trawlers - basically escape hatches in the back of nets.

Pollution and marine waste

Marine turtles which eat jellyfish can't tell the difference between a real meal and plastic rubbish, and will choke to death when they try to eat them. Fishing lines and nets thrown overboard can trap and drown turtles. Oil spills and other chemical pollution can be fatal to turtles that swim in affected waters.

Destined for extinction?

With all these threats facing them, it's hardly surprising marine turtles are at crisis point. In addition, many eggs don't hatch, any hatchlings which do emerge are vulnerable and huge numbers don't survive, and most turtle species take some years to get to breeding age.

PENGUINS

Of the 17 different species of penguin, five live and breed in the Antarctic – Adélie, gentoo, emperor, chinstrap

VITAL STATISTICS

Adélies are small penguins, standing at 70cm tall. Compare that with a fully-grown emperor penguin, at well over 1 metre tall and weighing up to 40kg, the size of a large dog. It's hard to tell males and females apart, as they're pretty much the same size. The species is instantly recognisable by the white rings around their eyes. They can be quite long lived: one individual monitored by scientists reached the age of 21.

They're sociable animals, and live in colonies called rookeries, which are easily detected because they're so smelly. There are more than 5 million Adélie penguins in the Antarctic, living in rookeries of many thousands.

FEEDING

Despite their size, Adélie penguins are ruthless hunters, and have been compared to lions in their dogged determination to track down their prey. Their main prey is krill, and they can dive up to 175m to flush out the minuscule creatures to catch nearer the surface. They have amazing stamina – their hunting trips can last up to three days.

As well as hunting for their own food, Adélie penguins are prey themselves to leopard seals and killer whales, but adult birds don't have many predators on land. Chicks, however, are vulnerable to attacks from giant petrels and skuas.



BREEDING

Adélie penguins only breed on ice-free land, and return to the same nest with the same mate each year from the age of three. These nests are built out of the pebbles they find on dry land during spring, and there is fierce competition for the best sites – stealing pebbles from other birds' constructions is quite common.

Females lay one or two eggs weighing 100-125g, and the parents take turns sitting on them for up to 40 days. They do this when the eggs hatch too, taking turns to guard the nest or fish. The chicks are big enough to be left alone when they're three weeks old, and come together in crèches to stay warm and safe while both parents are collecting food.



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WHAT'S THE THREAT...

Adélie penguins may be charismatic. But they're also in danger and they're classified as "near threatened" by the IUCN

The main reason they're under threat is because the world's getting warmer – climate change is melting their icy habitat in the Antarctic. This area is a huge frozen, desert – although it's bitterly cold, it rarely rains.

One of the Adélie's main food sources – krill – breeds and feeds under the Antarctic sea ice. A drop in the amount of this vital sea ice means there's been a long-term decline in krill in some areas. Coupled with the fact that krill is overfished by us humans, this may affect the amount of food available to the penguins.

As the Antarctic heats up, it's snowing more. Adélie penguins only nest on bare, snow-free ground, so more snow, falling later in the season, means that there's less space to nest. Snowier conditions mean chicks are born later when krill supplies are at a seasonal low, so the chicks are harder to feed and may die.

Other penguin species, like gentoos, are better at coping with the changing conditions in Antarctica, so they're 'muscling out' Adélie penguins.

... AND WHAT'S WWF DOING TO HELP?

We're helping to improve the way Antarctica is managed through the Antarctic Treaty and its Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). As well as tackling pirate fishing, we're working on a network of marine protected areas. This would not only help protect the region's wildlife but also help it cope better with climate change.

We're also helping shape the International Maritime Organisation's Polar Code, to make sure ships operate safely and responsibly in all polar waters.

As well as supporting the big picture, we help scientists studying Adélies in Antarctica. They fit temporary tracking devices to some birds to find out where they eat and breed, highlighting any changes in behaviour possibly caused by climate change.

SO WHAT'S SO IMPORTANT ABOUT THE ANTARCTIC?

The Southern Ocean around Antarctica takes up about 10% of the Earth's surface and supports lots of the world's marine animals. In the summer, the constant sunlight helps phytoplankton grow – the tiny marine plants which bear the load of the ocean food chain.

The Antarctic also plays a vital role in keeping the climate stable. Just like Arctic sea ice, the Antarctic ice cap bounces some of the sun's rays away from us. And it plays a crucial role in regulating ocean currents, as the ice-cold water meets warmer water at its surface and drops to the depths.

Antarctica has shown scientists about the impact people are having on our natural world. It was there that the hole in the ozone layer was found in the 1980s, which showed how man-made chemicals had damaged the atmosphere.

And as well as helping us understand climate change now, there's a unique archive locked in Antarctica's thick ice sheet, which tells us about our planet's climate over the past million years.

POLAR BEARS

- perfectly adapted to a freezing life

Polar bears are perfectly suited to their environment – from their furry, anti-slip feet to the tips of their small, heat-conserving ears.

FUR

thick, two-layered, and oily to repel water and prevent their coats from freezing. The fur looks white because the sunlight is reflected back down the hair-shaft to heat the skin. They moult every year, replacing their fur completely.

SIZE

the biggest of all bear species. Males (boars), weigh up to 800kg - biggest recorded was 1002kg and 3.6m long. Females (sows) are much smaller, but a pregnant female can weigh up to 500kg.

BREEDING

Female polar bears can breed at three years old – males mature later and have to compete for a mate so most won't breed until they are 10. As solitary animals with a vast territory range, finding a mate is an all-consuming occupation during the March to May breeding season. Pregnant females need to put on around 200kg for a healthy litter and can delay implantation so the cubs are born at the right time of year for their best chance of survival. Females retreat to a den in the Autumn and give birth and nurse the cubs during the winter. Tiny and hairless at birth, cubs weigh 450–680g (like four bananas) but the mother's fatty milk helps them gain weight quickly and they develop their fur and teeth in time to emerge from the den in March or April. The mother needs to regain weight fast by hunting in order to keep producing that all-important milk.

SKIN

black to soak up the sun's heat most efficiently. Under the skin, polar bears have a thick layer of fat, which insulates the animal when it's in the water.

EARS

very furry and smaller than other bears' so they retain the heat better and help keep the bear warm in winter temperatures of -30°C.

NOSE

the ultimate hunting tool in a landscape where most of the food is under the ice. Polar bears have an amazing sense of smell, and can smell a seal up to 1km away, even if it's under the ice. Their nostrils close when they're under water.

FEET

bigger than other bears' and work like snow-shoes, spreading the polar bear's weight evenly over the snow and ice. Non-retractable claws help grip on slippery surfaces; webbed toes act like flippers in the water.



DIET AND HUNTING

As top predators in the Arctic food chain, polar bears eat whatever they can. Their main food source is seals but walrus, narwhale, beluga whale, fish, birds, eggs – even other polar bears – are all on the menu too.

Polar bears need to eat about 2kg of fat each day – a large seal weighing 55kg would give a bear enough energy for a week. They have incredibly efficient metabolisms and can use 97% of all the fat they eat.

When they're really hungry, they can eat up to a fifth of their bodyweight – when you consider the weight of a fully grown boar is nearly 800kg, that's quite a meal.

Polar bears are superb hunters – vital for surviving in such freezing conditions. 'Still hunting' polar bears stake out a seal air-hole before pouncing on seals which poke their noses out to breathe. They'll also stalk seals basking on the ice and target 'nests' under the ice which they'll crash through to catch the pups.

HABITAT

Polar bears are found in the Arctic landscapes of Canada, Greenland, Norway's Svalbard archipelago, Russia and Alaska, and spend most of the time on, or near the edge of Arctic sea ice – the best place for hunting.



THREATS

Climate change: Today, climate change is the most serious threat to polar bears. The Arctic is warming roughly twice as fast as the global average, causing the ice that polar bears depend on to melt away.

The sea ice is melting earlier and forming later each year. Polar bears need the sea ice to hunt their main prey – seals. The reduction in sea ice means some bears are having to fast for longer – affecting their survival and breeding success.

Pollution: Toxic chemicals can pass through the food chain and accumulate in the body fat and tissue of predators: the further up the food chain, the more concentrations of toxic chemicals there are. Pollution brought by wind and water from other parts of the globe also affects them, as does development from the oil and gas industries which can damage or destroy habitat.

1. What disorients turtle hatchlings?
2. What was the weight of the largest recorded polar bear?
3. What animals eat Adèle penguins?
4. When are baby penguins old enough to be left on their own?
5. Up to how many species of animals and plants can live on just one turtle?
6. Which of these species of turtles lays the most eggs in a year?
7. What code is making sure ships operate safely and responsibly in polar waters?
8. How far away could a polar bear smell a seal?
9. A baby polar bear weighs about how much?
10. What industries are damaging and destroying polar bears' habitats?
11. What breed of penguin is “muscling out” the Adèle penguin?
12. A large seal would give a polar bear the energy to last how long?
13. What shape of hook would massively reduce the number of turtles caught?
14. What is the diet of a Flatback turtle?
15. What was found in the 1980s?