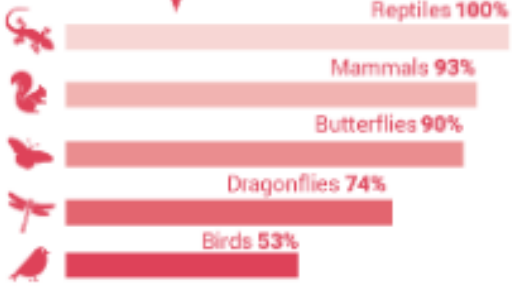
Unique environment

Dorset environmental economy

(natural assets, agriculture, forestry, fishing, energy, tourism)

...is valued at up to
15% of the local economy
and supports up to **61,000** jobs

Native species living in Dorset



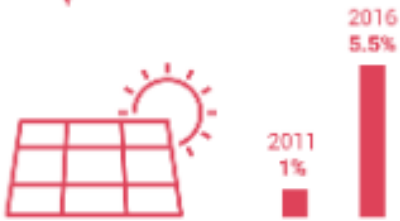
Natural status

Dorset has England's only natural
World Heritage Site and two
Areas of Outstanding Natural Beauty (AONB)
covering **54%** of the Dorset Council area

**Living in Dorset

Nine out of ten Dorset residents said
the environment was an
important factor in their
decision to live in Dorset

*Renewable energy production in Dorset



**Amount of waste sent to landfill

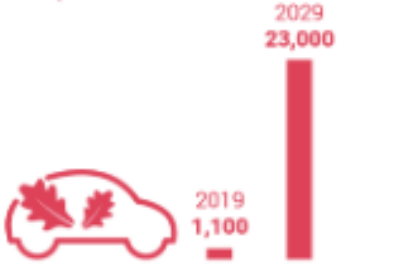
70% reduction

Publicly available charging points in Dorset

Car and van emissions

Government targets:
All new cars and vans should be
"effectively zero emission" by **2040**

Ultra Low Emission Vehicles (ULEVs)



Current and predicted ULEVs registered in Dorset

Data underlying the infographics is provided by the Research Team. For more information contact research@dorsetcouncil.gov.uk. *Dorset Local Enterprise Partnership Area (DLEP). **Dorset County Council. Dorset refers to the new Dorset Council area that came into effect 1 April 2019, unless otherwise indicated.

COASTAL PROTECTION

When a coastline is at risk from erosion or flooding, there are a number of defence strategies that can be used to lessen the impact.

COASTAL EROSION

COASTAL DEFENCE

Hard engineering strategies are man-made structures used to defend the coastline. Although effective, these are often expensive and will eventually need replacing.

GROYNES

Wooden breakwater fences that prevent longshore drift. Sand and pebbles build up, absorbing the power of the waves.

SEAWALLS

Curved concrete walls built at the back of the beach reflect wave energy back to the sea.

ROCK ARMOUR / RIP RAP

Large boulders are placed at the base of cliffs. Wave energy is absorbed, reducing erosion and preventing cliff collapse.

GABIONS

Boulders and rubble are wired together into large blocks to stop them moving. The blocks absorb the wave energy.

CLIFF STABILISATION

Cliffs are weak when steep and saturated. To prevent collapse, cliffs can be graded and drains installed.

BEACH NOURISHMENT

Material dredged from the sea bed is used to build up the beach.

In areas of low population and economic value, soft engineering strategies are used. The sea is allowed to erode and flood the land. Over time mud flats, salt marshes and beaches will develop, forming natural coastal defences.

Coastal Landforms

Coastal landforms are the result of physical processes that have varying effects on different structures and types of rock.

Landforms Resulting from Erosion

Headlands and Bays

Headlands and bays form where there are alternating bands of soft and hard rock.

A discordant coastline is one where bands of soft and hard rock run at right angles to the coast, so the rocks erode at different rates. The protruding bands of isolated rock are called headlands.

The formation of headlands and bays can take thousands of years.

Wave-Cut Platforms

Waves and rocks crash against the foot of a cliff face.

The base of the cliff is eroded away, leaving a wave-cut notch.

The unstable cliff collapses. With repeated erosion, the cliff retreats to form a wave-cut platform.

Caves, Arches and Stacks

Headlands are gradually eroded to form caves, arches and stacks.

1. Waves crash repeatedly into the headland, causing faults and joints to erode and develop into cracks and small caves.
2. Constant erosion causes the caves to get bigger until their back walls are eroded away completely, creating natural arches.
3. The arches widen as more rock is eroded away through weathering.
4. The arches eventually collapse, leaving an isolated pillar known as a stack. Further erosion of the stack will leave a shorter stump.

Landforms Resulting from Deposition

Beaches

Beaches are the areas found between high and low tide marks. Generally formed from sand or shingle, they are the most common features of deposition found on coasts.

Sandy Beaches

- These occur where there are constructive waves.
- The **swash** (water moving up the beach) is stronger than the **backwash** (water moving back down the beach) so sediment builds up on the beach.
- Small sand particles are easily carried back down the beach by the backwash so the beaches are long and shallow.

Shingle Beaches

- These occur where there are high energy waves.
- The backwash is stronger than the swash so smaller sand particles are washed away, leaving larger sediment on the beach.
- The weak swash does not move the sediment far up the beach. This creates short and steep beaches.

Sand Dunes

Sand dunes are mounds of sand that are found behind sandy beaches. To form, they require a large, flat beach, a good supply of sand, strong winds and obstacles.

1. Sand is deposited by longshore drift and blown to the top of the beach by onshore winds.
2. Obstacles, such as driftwood, block sand movement, causing deposits to build over time.
3. Vegetation (e.g. marram grass) helps to stabilise and bind the sand together, creating small embryo dunes.
4. Over time, the dune migrates inland.

Bars and Spits

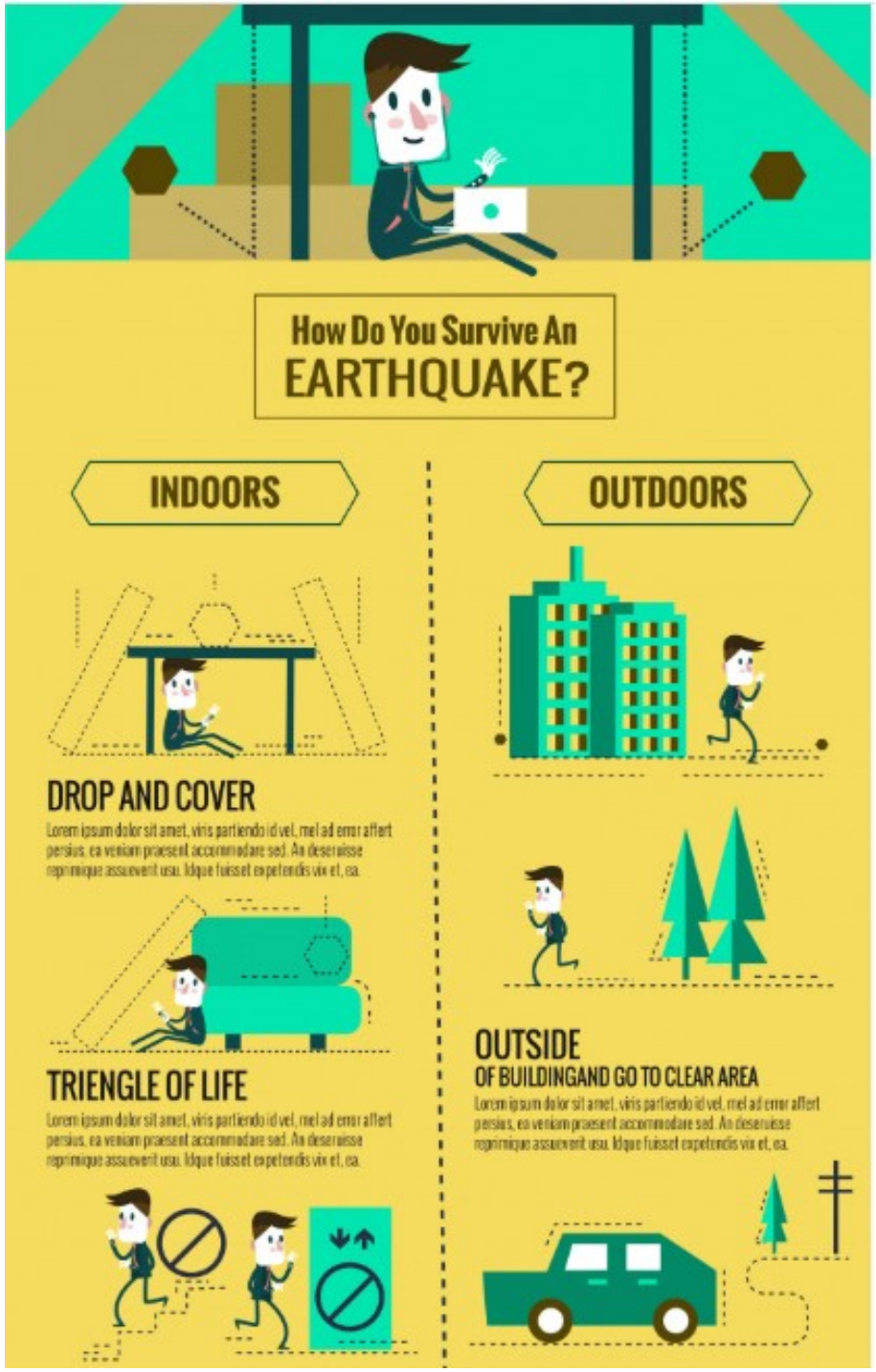
Spits are long stretches of sand or shingle that extend from the land. They form where the coastline suddenly changes shape (e.g. at river mouths or estuaries).

Sand and shingle are transported by longshore drift past the point where land ends. As the waves lose energy, material is deposited, forming a spit. Strong winds can cause the end of the spit to curve towards the land, creating a recurved end.

In the sheltered area behind the spit, vegetation can grow easily, and a salt marsh may form.

Bars form when a spit joins two headlands together, trapping the water in a lagoon behind it.


DROP
COVER
HOLD ON
CALM DOWN
Try to stay as calm as possible
INSIDE
Stay away from furniture, windows and lamps
OUTSIDE
Stay away from buildings, walls and power poles
STOP
WHILE DRIVING
If you are driving stop in a safe place, turn on the hazard lights and stay inside the vehicle
WHILE ON WHEEL CHAIR
If you use a wheelchair, put the brakes on in a safe place and protect your head with your arms
WHILE AT CROWDED PLACE
If you are in a crowded place protect your head with your arms or take cover under seats and tables


How Do You Survive An
EARTHQUAKE?
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OUTDOORS
DROP AND COVER
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OUTSIDE
OF BUILDINGAND GO TO CLEAR AREA
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SUPER SWIMMERS

SAVE YOUR BREATH

Some animals that live in the water don't have gills, so they have to hold their breath as they swim. But who can last the longest underwater?

Harbour seal
5 minutes

Dolphin
8 minutes

Walrus
10 minutes

Human
22 minutes*

Northern elephant seal
30 minutes

Alligator
2 hours

* This is the longest time ever recorded for a human being. The average time a human can hold their breath is only around 1 minute.

PACKED LIKE SARDINES

The **sardine** run is one of the biggest coordinated shoaling movements of fish. They spawn near the African coast. The shoals can be up to 4.5 miles/7 kilometres long, 1 mile/1.6 kilometres wide and are visible from space.

The shoaling fish respond to the position of their neighbours, trying not to get too close to some and keeping far enough away from others.

THE SQUID AND THE WHALE SHARK

A giant squid reaches up to 18 metres/59 feet long.

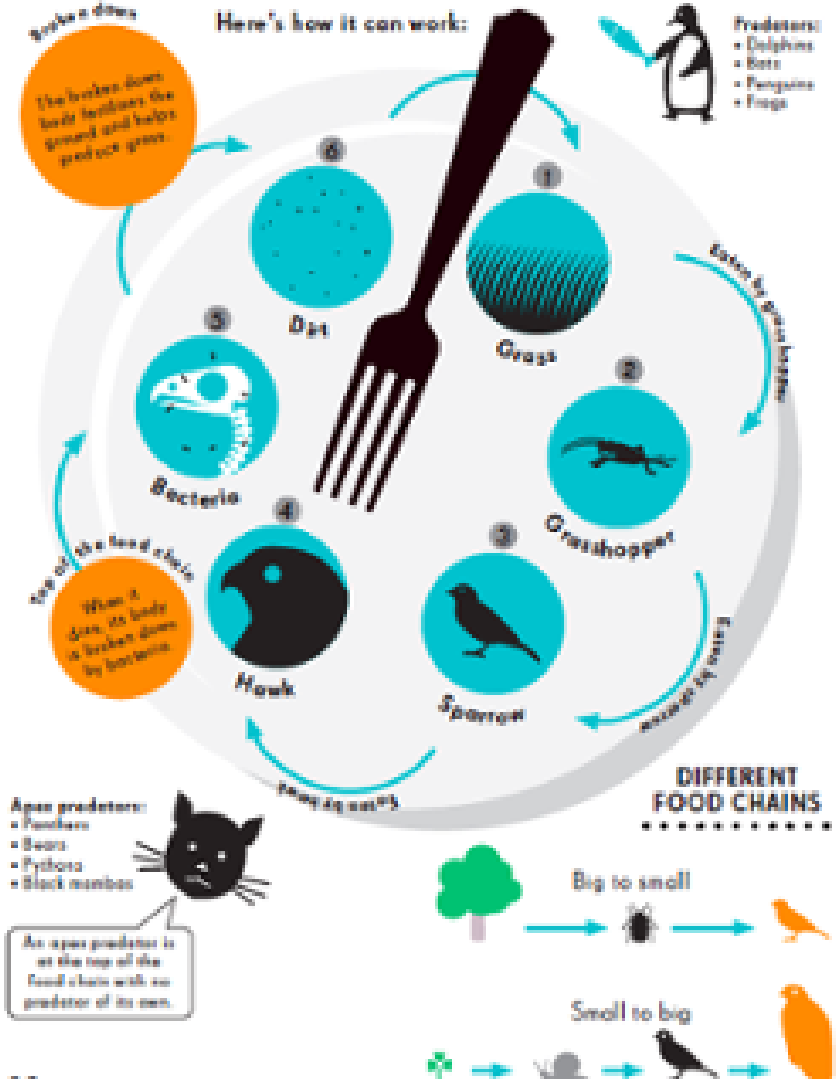
At 12.5 metres/41 feet, the **whale shark** is the longest fish in the world.

When threatened, sardines (and other foraging fish) group together to create huge bait balls of up to 20 metres/65.6 feet in diameter to confuse the predators.

Thousands of dolphins feed on the sardines by herding groups of the fish together like sheepdogs.

FOOD CHAIN

The food chain is a continuous process. At any moment something is being eaten, dies, breaks down, and is being eaten again. It can never have less than three stages.



DIFFERENT FOOD CHAINS

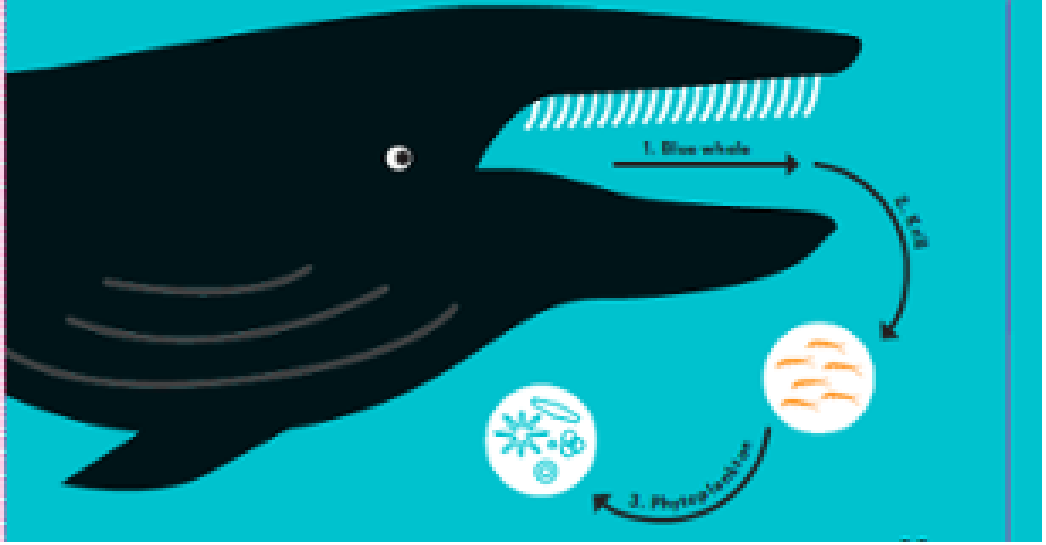
WHALE-SIZE LUNCH

The largest animal on Earth has a food chain with only three links. (No other mammal on the planet is two steps above microscopic in the food chain.)

A blue whale may consume up to 6.3–7.3 metric tons/6.9–8 tons of food per day during the summer feeding season.

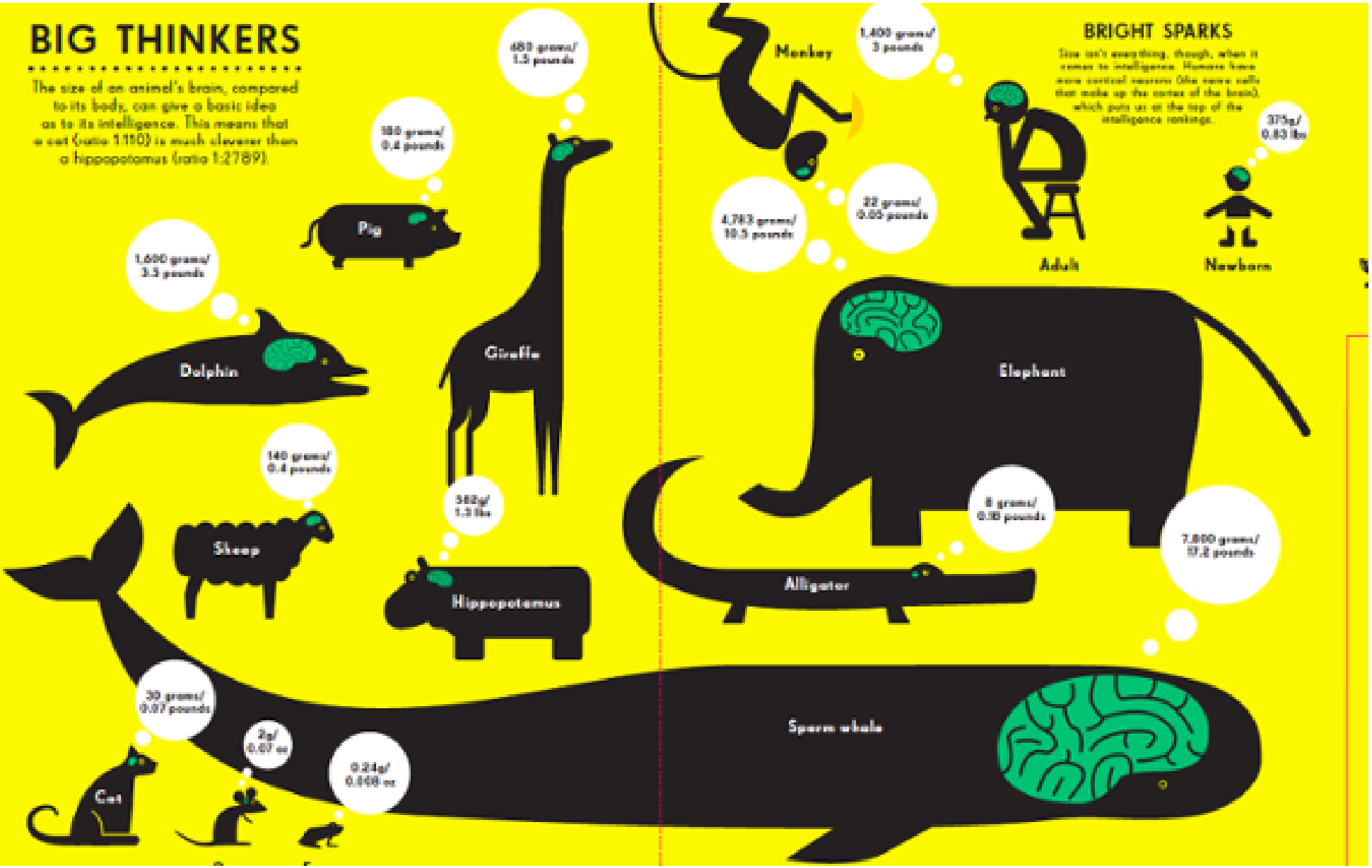
That's 3,628 kilograms/8,000 pounds of krill per day!

For the other eight months of the year, it apparently doesn't eat anything at all, living off stored fat.



BIG THINKERS

The size of an animal's brain, compared to its body, can give a basic idea as to its intelligence. This means that a cat (ratio 1:110) is much cleverer than a hippopotamus (ratio 1:2789).



BRIGHT SPARKS

Size isn't everything, though, when it comes to intelligence. Humans have more cortical neurons (the nerve cells that make up the cortex of the brain), which puts us at the top of the intelligence rankings.