Welcome to the first edition of the Forge STEM Newsletter. (Logo designed by Jake Rushton)

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The giant Skate

Name: giant skate

length: 3 metres (18 feet)

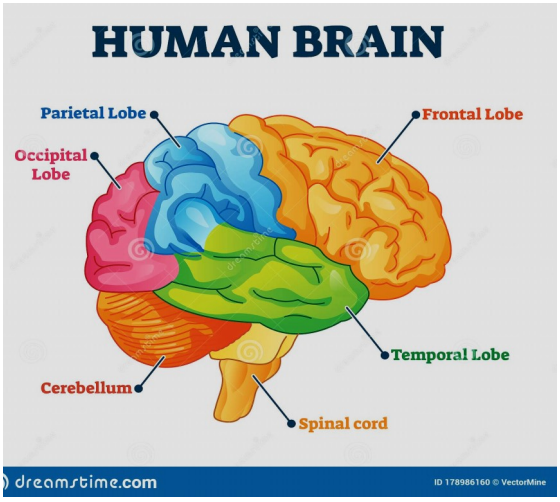
location: Scotland

weight: 200 kilogra

Information:

The giant skate or the flapper skate are very rare and exremely endangered The are more endangered than a red panda. They are 3 metres tall (18 feet) and 200 kilograms! They are found in the scotland Argyle coast along with many other species such as dolphins, seals, Coral and many fish. They are known as the worlds largest skate They are really magical and if you ever see one you are the luckiest person alive. Thee eggs are known as a mermaids purse but no-one knows where they lay them. The eggs sometime get washed up on the shore and they do look very beautiful almost like a mushrooms stalk or a peice of bark.

By Rukaya Hasa



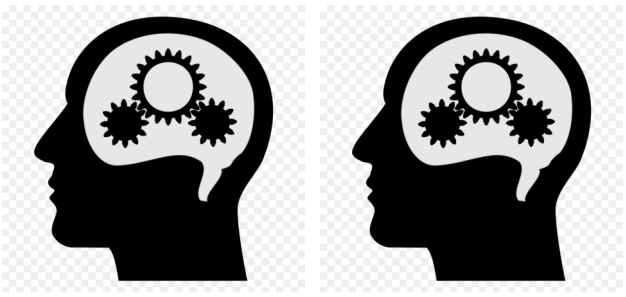
OUR BRAINS!

The brain is made up of three different parts the cerebrum, cerebellum, and brainstem

The cerebrum: this is responsible for a number of things like speech, motion, it also controls movement and learning it's the largest part of the brain

The cerebellum: this sits just under the cerebrum as you can see in the diagram below its main function is for helping with muscle movement making sure you sit up straight and your posture is also responsible for the balance.

The brainstem: plays a really important function by connecting the cerebrum and cerebellum to your spinal cord. It automatically looks after many of our bodies' functions like body temperature, digestion, heart rate.



The human brain is one of the most powerful organs in the body.

New GCSE in natural history

INTRODUCTION -

The Department for Education is to back a new GCSE in natural history from 2025 and will roll out "greater support" for teaching climate change in schools, as part of a new sustainability strategy to be launched by Nadhim Zahawi today.

Dfe has backed proposals by OCR (exam board) for the new qualification, to enable further understanding on the matter.

WHAT WILL IT AID WITH?

The new qualification will help students to develop a rich understanding of the **natural** world: from their own local wildlife, environment and ecosystem.

In 2020, OCR organised a consultation to help shape early thinking In 2020, OCR organised a consultation to help shape early thinking about what a GCSE in Natural History might look like. The consultation was open to everyone and its aim was to seek views on the purpose of Natural History, what Natural History is and explore the key themes the qualification would need, such as conservation, the early world, and the study of flora and fauna. The consultation also sought thoughts on the practicalities and the importance of observing nature in real situations outside the classroom.

WHAT DOES THE GOVERNMENT THINK OF THIS NEW GCSE

The government has backed the new qualification for England following a decade-long grassroots campaign by environmentalists, confirming that they are fully backing this new opportunity for learning for the future students of England.

Nuclear fusion breakthrough biggest since 1997!!

The UK-based JET laboratory has smashed its own world record for the amount of energy it can extract by squeezing together two forms of hydrogen.

If nuclear fusion can be successfully recreated on Earth it holds out the potential of virtually unlimited supplies of low-carbon, low-radiation energy.

The experiments produced 59 megajoules of energy over five seconds (11 megawatts of power).

This is more than double what was achieved in similar tests back in 1997.

It's not a massive energy output - only enough to boil about 60 kettles' worth of water. But the significance is that it validates design choices that have been made for an even bigger fusion reactor now being constructed in France.

"The JET experiments put us a step closer to fusion power," said Dr Joe Milnes, the head of operations at the reactor lab. "We've demonstrated that we can create a mini star inside of our machine and hold it there for five seconds and get high performance, which really takes us into a new realm."

Scientists and engineers working at the Joint European Torus have achieved a record performance for sustained fusion energy. It is the clearest demonstration of the potential for fusion energy to deliver safe and sustainable low-carbon energy in almost 25 years. It is located at Culham Centre in oxfordshire.

A future fusion power plant could harness boundless energy from the reaction that powers the sun itself: nuclear fusion. During this process hydrogen nuclei fuse together under extreme temperatures of 150 millions of degrees, to yield energy in the form of heat.

To achieve fusion, researchers have been practicing holding hot bubbles of gas or *plasma* in donut-shaped reaction chambers called tokamaks, where strong magnetic fields and electric currents keep the plasma in check. One example is the research device JET, the six-meter-sized Joint European Torus in Culham, UK.