

DRIFTING CONTINENTS

Remember the Earth's crazy-paving crust? Well, get this: the crusty plates might look rock solid, but they're constantly moving under your feet. They drift about on the layer of hot, gooey magma underneath. What's that? Don't worry. You won't get carried away. The plates usually move so slowly that you don't normally notice a thing.

A moving story

The person who worked out that plates move was German geographer Alfred Wegener (1880–1930). When eagle-eyed Alf looked at a map, he noticed that the east coast of South America fitted snugly into the west coast of

Africa, like two pieces of a giant jigsaw. Alf reckoned they must have been joined together at one time and later drifted apart! Wicked. After that, the pieces just fell into place.

Here's Parky to show you how on earth we ended up with today's continents:

250 million years ago

All the continents are joined together in one colossal chunk of land, called Pangaea (that's ancient Greek for 'all lands'). Around it is an enormous ocean, called Panthalassa (that's Greek for 'all seas').

200 million years ago

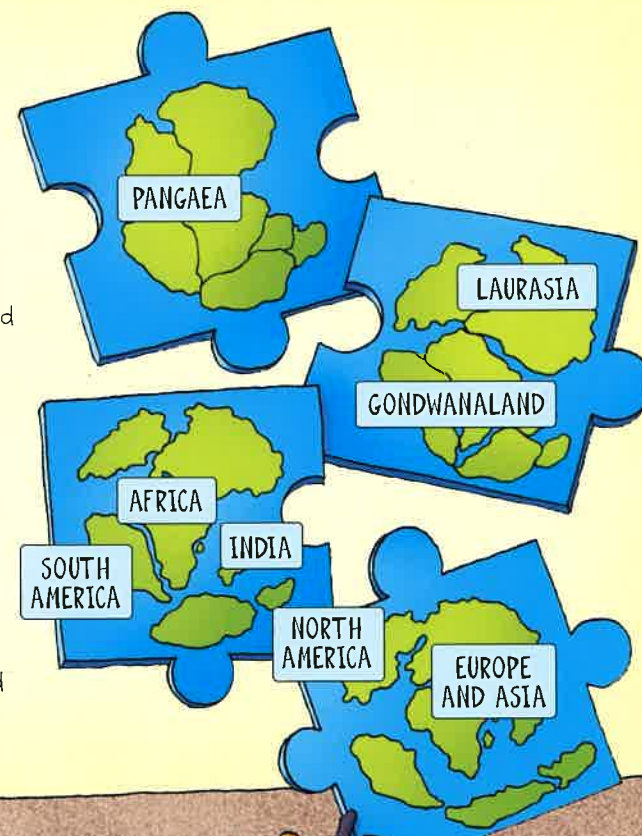
Pangaea starts splitting in two. The bottom bit's called Gondwanaland. The top bit's called Laurasia.

135 million years ago

Gigantic Gondwanaland splits into Africa and South America, with the Atlantic Ocean in between. India breaks off and heads north to Asia.

40 million years ago

Australia and Antarctica start drifting apart. North America shifts west away from Europe, leaving Greenland as an isolated island.



GET MY DRIFT?

Push and shove

Unfortunately for poor old Alf, no one believed a word of his crackpot theory. In fact, many geographers split their sides laughing. It wasn't until the 1960s that oceanographers* made a

dazzling, deep-sea discovery that proved Alf was right all along. Here's how they might have reported their earth-shattering finds:

Important note 1

In some places, two plates of seabed are splitting apart and red-hot, runny magma spews up through the crack. And get this – when the magma hits the cold sea water, it cools and turns into hard rock ... making new bits of sea bed. So the sea floor is slowly spreading, pushing the continents further apart. Brilliant, isn't it? But why isn't the Earth getting bigger with all this extra rock? It's a mystery.

Note: must do more research into this.

Important note 2

Yippee! Yippee! We've got the answer. Oh, clever, clever us! Remember the spreading seabed? Well, in other places, we found the plates are bashing into each other instead of splitting apart. One gets pushed under the other and melts back into the Earth. This pushes the continents closer together. And guess what? The Earth stays the same size because, amazingly, the melting balances out the spreading. Exactly. Wicked, or what?

WICKED WORLD FACTS

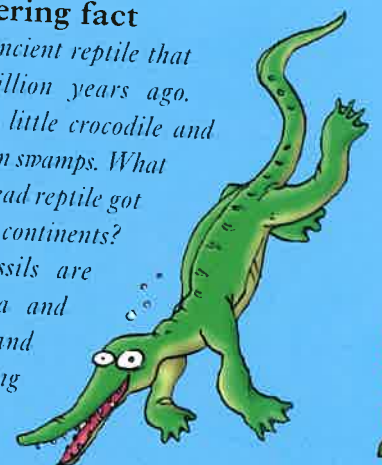
Geographers call the way the plates move 'plate tectonics' (teck-ton-iks). Tectonics come from an ancient Greek word that means 'building'.

Coal is another crucial clue to the drifting continents. It's been found in icy Antarctica, proving that it was once warm and wet. That's because coal is made from trees that only grew in hot, tropical forests.

Alfred got his ingenious idea for the way the plates move while he was on holiday in Greenland. He was watching a load of icebergs drifting out to sea at the time.

Earth-shattering fact

Mesosaurus was an ancient reptile that lived about 300 million years ago. It looked a bit like a little crocodile and liked lounging around in swamps. What on Earth has a long-dead reptile got to do with drifting continents? Well, mesosaurus fossils are only found in Africa and South America – and nowhere else. Proving that these continents were once joined.



*OCEANOGRAPHERS IS THE POSH NAME FOR DEEP-SEA SCIENTISTS.

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