



Read the science passage carefully. Then answer the questions below.

## IS Iceland: Where Continents Drift Apart

# IS

Iceland is a land of dramatic contrasts, where glaciers meet volcanoes and hot springs bubble from the ground. But what makes this island nation truly special is its unique location: it sits directly on top of the Mid-Atlantic Ridge. Imagine a massive underwater mountain range that snakes through the Atlantic Ocean, marking a place where Earth's tectonic plates are slowly but surely pulling apart. Iceland is one of the few places on Earth where this incredible geological process is visible above sea level.

The Mid-Atlantic Ridge is a divergent plate boundary, meaning it's where two of Earth's giant tectonic plates are moving away from each other. In Iceland's case, it's the North American Plate and the Eurasian Plate. Deep beneath the surface, the Earth's mantle is constantly moving in a slow, churning dance called convection. Hot, less dense rock rises, and cooler, denser rock sinks. This movement creates immense forces that pull the plates apart, like a giant conveyor belt.

As these plates separate, the pressure on the molten rock, or magma, beneath the crust is reduced. This allows the magma to rise up through cracks and fissures. When it reaches the surface, it erupts as lava, forming new volcanic rock. Over millions of years, this continuous process of magma rising, solidifying, and pushing the plates further apart has built up the Mid-Atlantic Ridge and, specifically, the island of Iceland itself. It's like Earth is constantly patching itself up with new material.

This constant geological activity means Iceland is one of the most volcanically active regions in the world. Its landscape is dotted with volcanoes, geysers, and hot springs, all



powered by the heat from deep within the Earth. Visitors can even walk between the North American and Eurasian plates in places like Þingvellir National Park, seeing the visible rift valley where the land is literally splitting apart. This ongoing creation of new crust makes Iceland a living laboratory for understanding how our dynamic planet works and how new land is continuously formed.

### COMPREHENSION QUESTIONS

- (1) **What two tectonic plates are pulling apart at the Mid-Atlantic Ridge in Iceland?**
- (A) North American Plate and Eurasian Plate    (B) Pacific Plate and Nazca Plate  
(C) African Plate and South American Plate    (D) Indian Plate and Antarctic Plate
- (2) **How does the movement of magma contribute to the formation of new land at the Mid-Atlantic Ridge?**
- (A) Magma rises, cools into new rock, and pushes the existing plates further apart.  
(B) Magma heats the ocean water, causing it to evaporate and leave new land behind.  
(C) Magma creates strong winds that blow sediment onto the ridge, building up new land.  
(D) Magma causes earthquakes that break off pieces of continents, which then float together to form new land.
- (3) **In the passage, what does the word 'divergent' mean in the context of a plate boundary?**
- (A) Moving away from each other    (B) Sliding past each other  
(C) Colliding into each other    (D) Staying in one place

(4)



**If the Mid-Atlantic Ridge stopped pulling apart, what would be the most likely long-term effect on Iceland?**

- A** Iceland would stop growing and might experience less volcanic activity.
- B** Iceland would begin to sink underwater due to lack of new material.
- C** Iceland would become much hotter and experience more geysers.
- D** Iceland would start moving towards another continent and eventually collide.

**(5) Explain in your own words how Iceland's location on the Mid-Atlantic Ridge makes it a unique place for scientists to study Earth's geology.**

---

---

---

---

