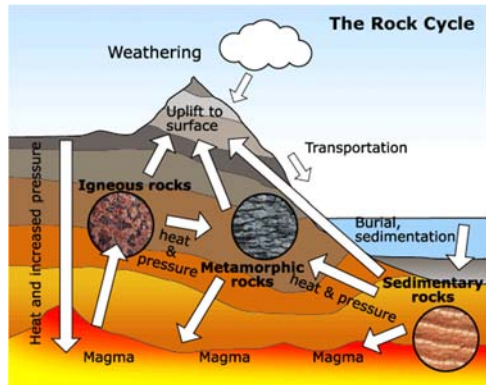


Name _____

Rock Time Travel: How Long Does the Rock Cycle Take?



Have you ever wondered how long it takes for rocks to go through the entire rock cycle? It's like a time-travel adventure deep within the Earth's crust. Rocks may seem static, but they are constantly changing and evolving over millions of years. Let's embark on a journey to discover the fascinating timeline of the rock cycle.

A Journey Across Geological Time

Imagine you could travel back in time millions of years to witness the birth of a rock. That's the kind of timeline we're talking about when we delve into the rock cycle. Rocks don't change overnight; they transform gradually through a series of natural processes. So, how long does it take for a rock to complete this cycle? Well, let's break it down.

The Birth of Rocks: Igneous Beginnings

Our journey begins with igneous rocks, the first heroes of the rock cycle. These rocks are born from fiery magma and lava. The process of cooling and solidifying magma takes thousands to millions of years. Once an igneous rock forms, it can last for millions to billions of years without changing significantly.

Weathering and Erosion: The Slow Erosion of Time

As igneous rocks brave the elements on the Earth's surface, they face the slow but constant forces of weathering and erosion. Wind, water, and ice chip away at these rocks bit by bit. It can take tens of thousands to millions of years for rocks to erode and break down into sediments.

Sedimentary Rocks: Layers of Time

Sedimentary rocks, our next stop in the rock cycle, are built layer by layer. Over millions of years, sediments accumulate and compress under the weight of more sediments above them. This pressure gradually transforms these sediments into solid rock. So, the formation of sedimentary rocks can take millions to tens of millions of years.

Metamorphism: Heat and Pressure's Slow Dance

When sedimentary rocks are buried deep within the Earth's crust, they face intense heat and pressure. This causes them to undergo metamorphism, a slow and gradual transformation. Metamorphism can take tens of millions to hundreds of millions of years to complete.

The Journey Comes Full Circle

After metamorphism, rocks can continue their adventure by melting and becoming magma once again. This restarts the rock cycle, and the process begins anew. The entire journey of rocks through the rock cycle is a never-ending cycle of transformation that spans billions of years.