

Do Now
Take out notes for U1L3E2
Along with Pangea map



Module F

Lesson 3

Exploration 2

Analyzing Ocean Data



Seafloor Spreading

- Early 1960s: Harry Hess proposed this the theory of Seafloor spreading
- The idea that magma from Earth's mantle rises to the surface at mid-ocean ridges and cools to form new seafloor, which new magma slowly pushes away from the ridge

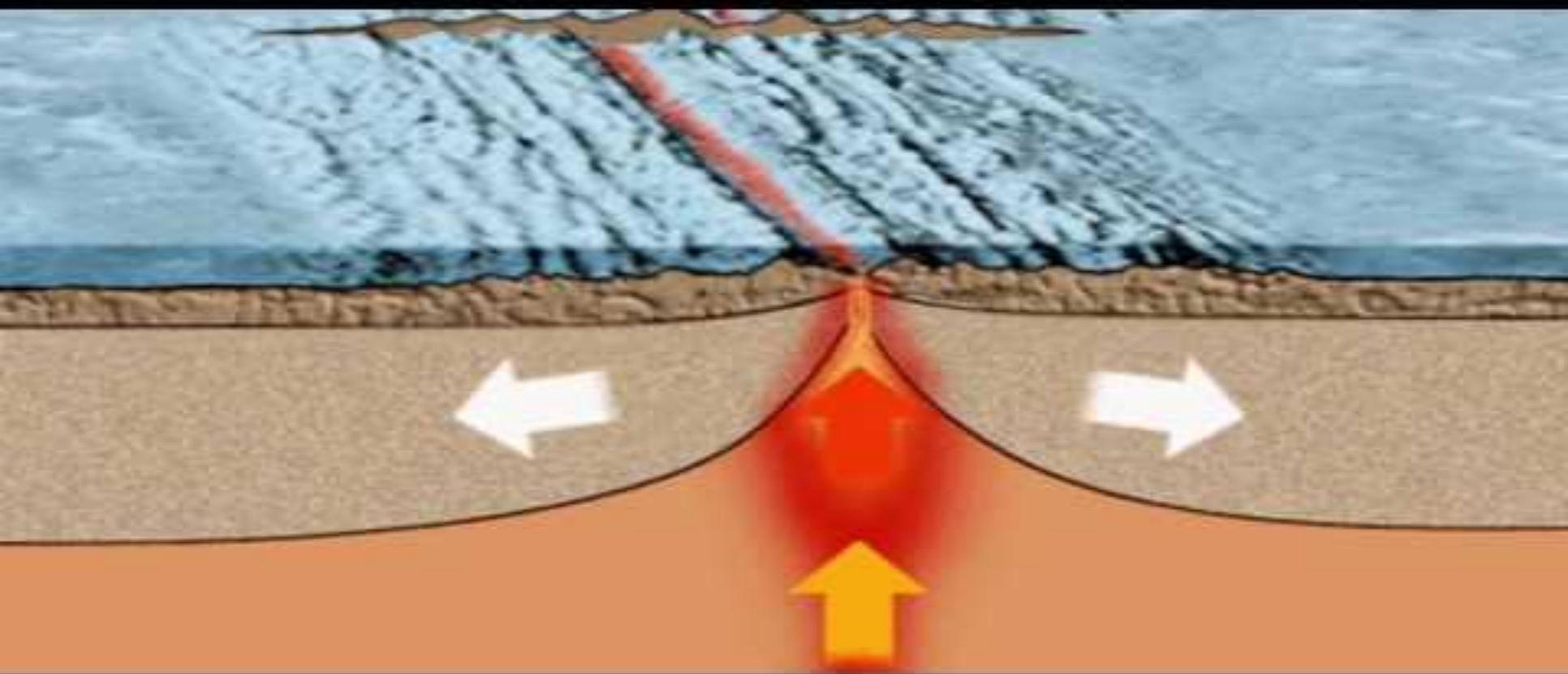


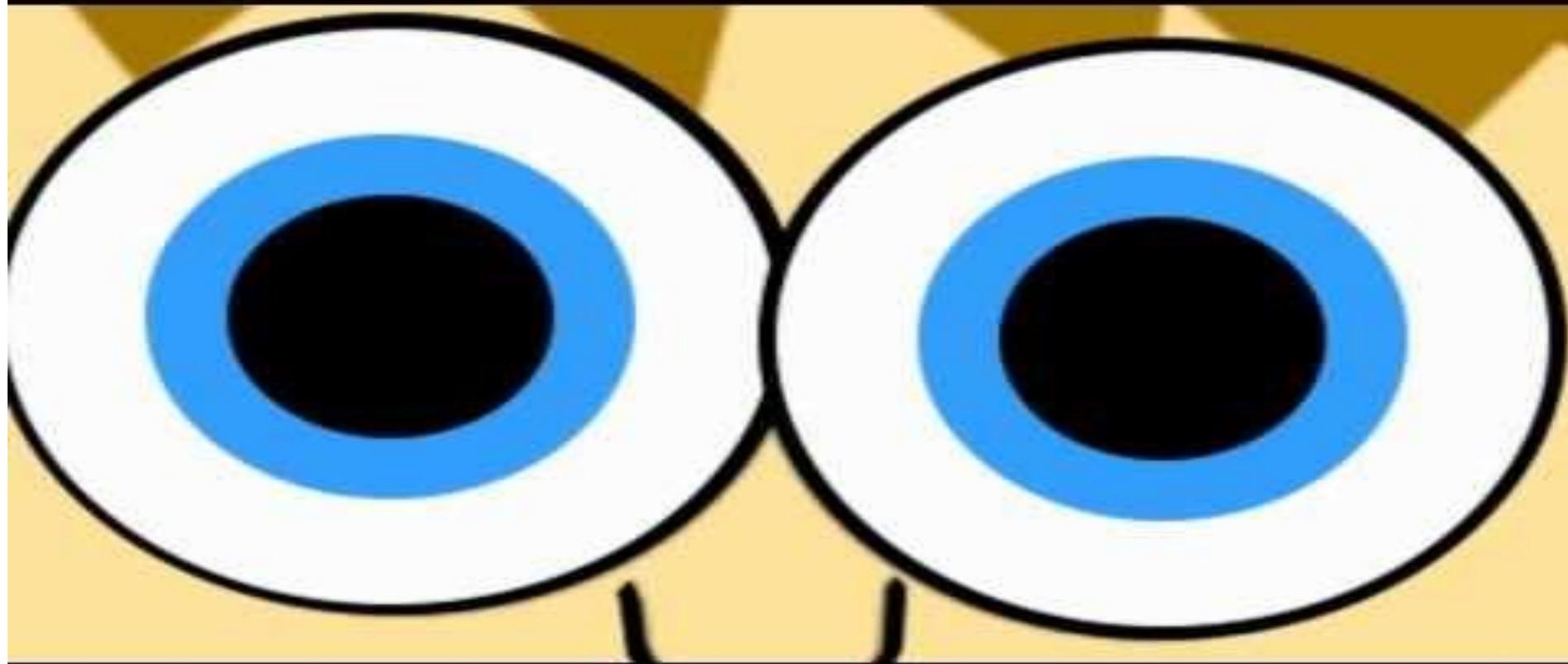
DISCOVERY
EDUCATION



Mid-Atlantic Ridge
Pingvellir, Iceland







Complete seafloor spreading cut and fold activity

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Discoveries in the Ocean

- In the mid-1900s, new technology allowed scientists to map the ocean floor.
- They found a giant continuous mountain range they called the *mid-ocean ridge*.
- One part, the Mid-Atlantic Ridge, runs along the entire middle of the Atlantic Ocean.
- Scientists also found *deep-ocean trenches*, which are the deepest valleys on Earth's surface.

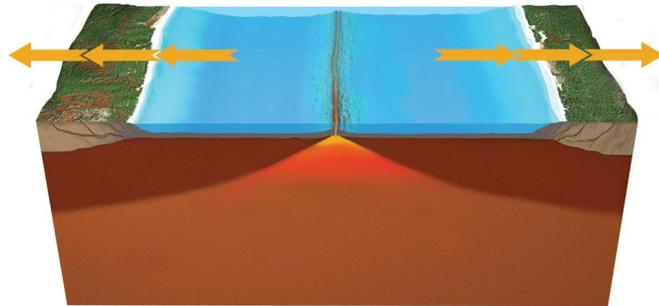
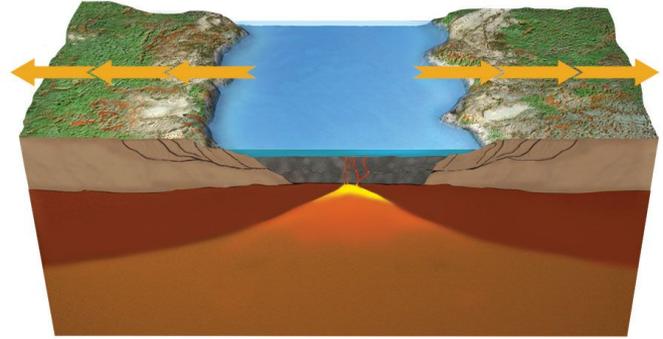
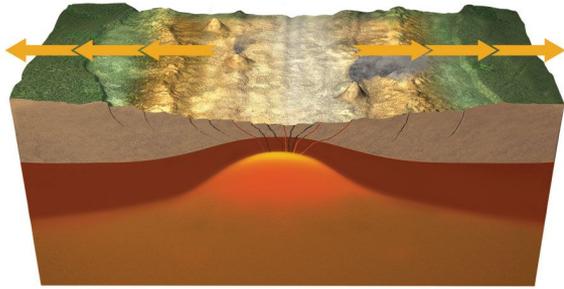
Complete Ocean discoveries Activity

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Seafloor Spreading and Mid-Ocean Ridges

- First, heat from deep within Earth rises toward Earth's surface and stretches the crust apart and eventually form a *rift valley* and results in earthquakes and volcanic eruptions, adding new rock
- The valley can fill with water to become a narrow sea, sometimes called a *linear sea*, eventually widens enough to become an ocean basin.

Copy these diagrams into your Evidence ISN
and label them correctly



How did the mid-ocean ridge form?

- The ocean floor moves away from a rift valley on either side, like two conveyor belts.
- As it moves away, it becomes cooler and denser and sinks deeper beneath the water.
- Closer to the rift valley, the ocean floor is an elevated ridge because the newly formed rock there is warmer and less dense.
 - The more dense rock is forced down
- This elevated ridge is the mid-ocean ridge.

Complete seafloor spreading and mid-ocean ridge Activities

Complete Do the Math Activity

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Deep Ocean Trenches

- Deep-ocean trenches form where the ocean floor is cool and dense enough to sink into Earth's interior.
- New ocean floor forms at a mid-ocean ridge. It slowly moves away from the ridge while it cools and becomes denser.
- Millions of years later, it is recycled as it sinks into Earth at a deep-ocean trench.
- Volcanic mountain chains often run parallel to deep-ocean trenches.
- This is because sinking slabs of ocean floor cause magma to form.
 - The motion at trenches also causes earthquakes.



Create a left side Evidence ISN page to explain what you learned from the video about the Marianas Trench, 36,070 feet (about 7 miles) below the surface of the ocean



Complete Evidence Notebook about the appearance of the new island

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Complete Explaining the Age of the Ocean Floor Activity

