ESS 100 (Stapleton) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Plate Tectonics

1. Layers of the Earth:

* Label the layers
* Describe the type(s) of material in each layer
* Describe the rigidity (or fluidity) of each layer
* Describe the density of each layer

A black and white circular object

Description automatically generated

2. Reasons why the inside of the Earth is hot:

3. Why is the surface of the Earth cooler?

4. Use arrows to demonstrate the plate motions at the three types of plate boundaries.

5. Create a diagram showing how and where convergent and divergent plate boundaries form.

* Draw three plates
* Label one plate boundary “convergent” and one “divergent.”
* Draw the currents in the mantle
* Use “hotter” and “colder” labels to help explain why there are currents in the mantle.

6. The currents in the Earth’s mantle are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ currents.

7. Briefly explain what causes these currents.

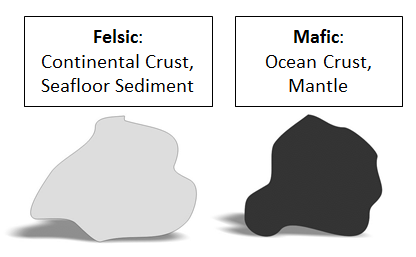
8. What are the three ways that energy can be transferred? Give an example of each.

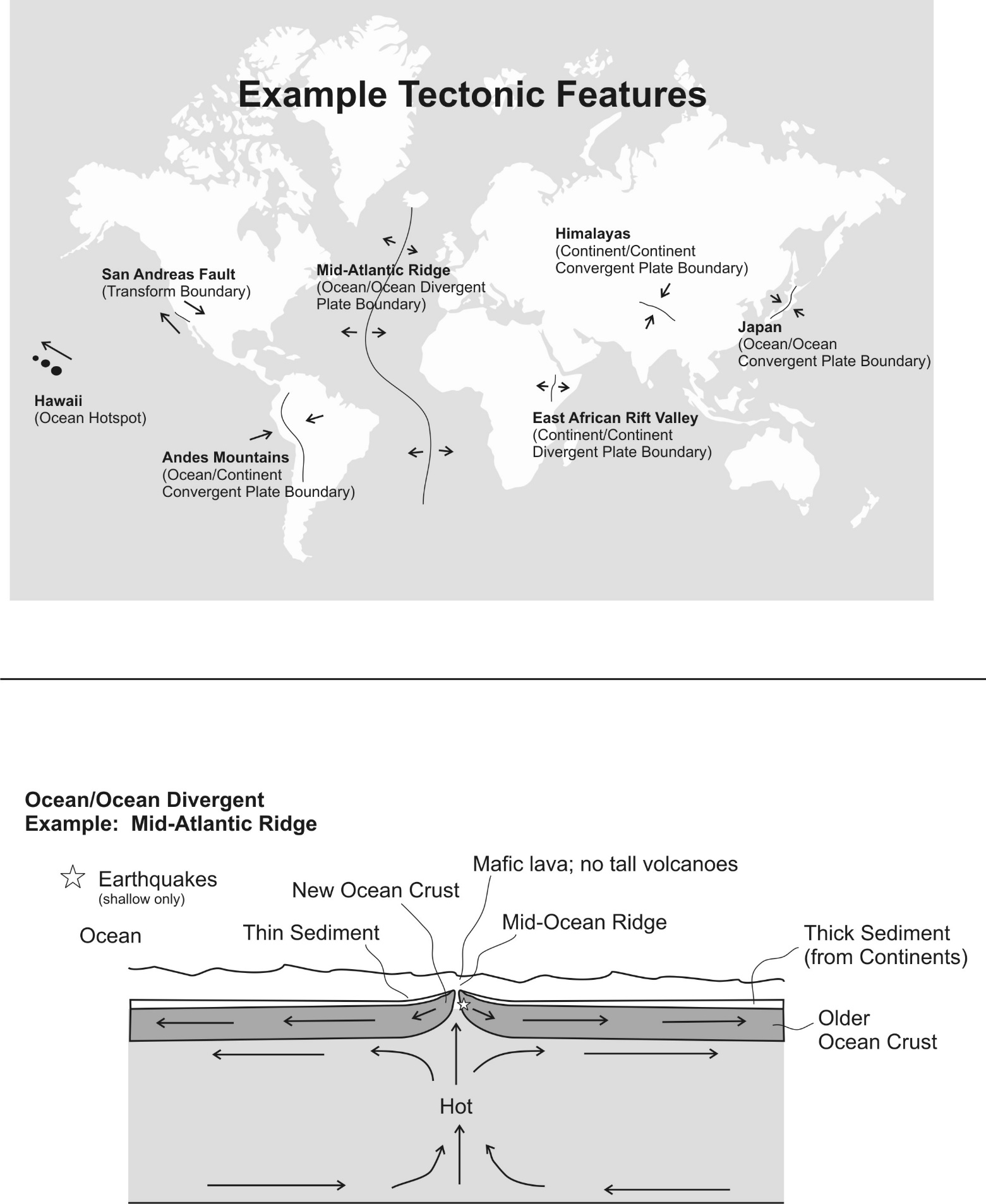
Two General Categories of Rocks: **Mafic and Felsic**

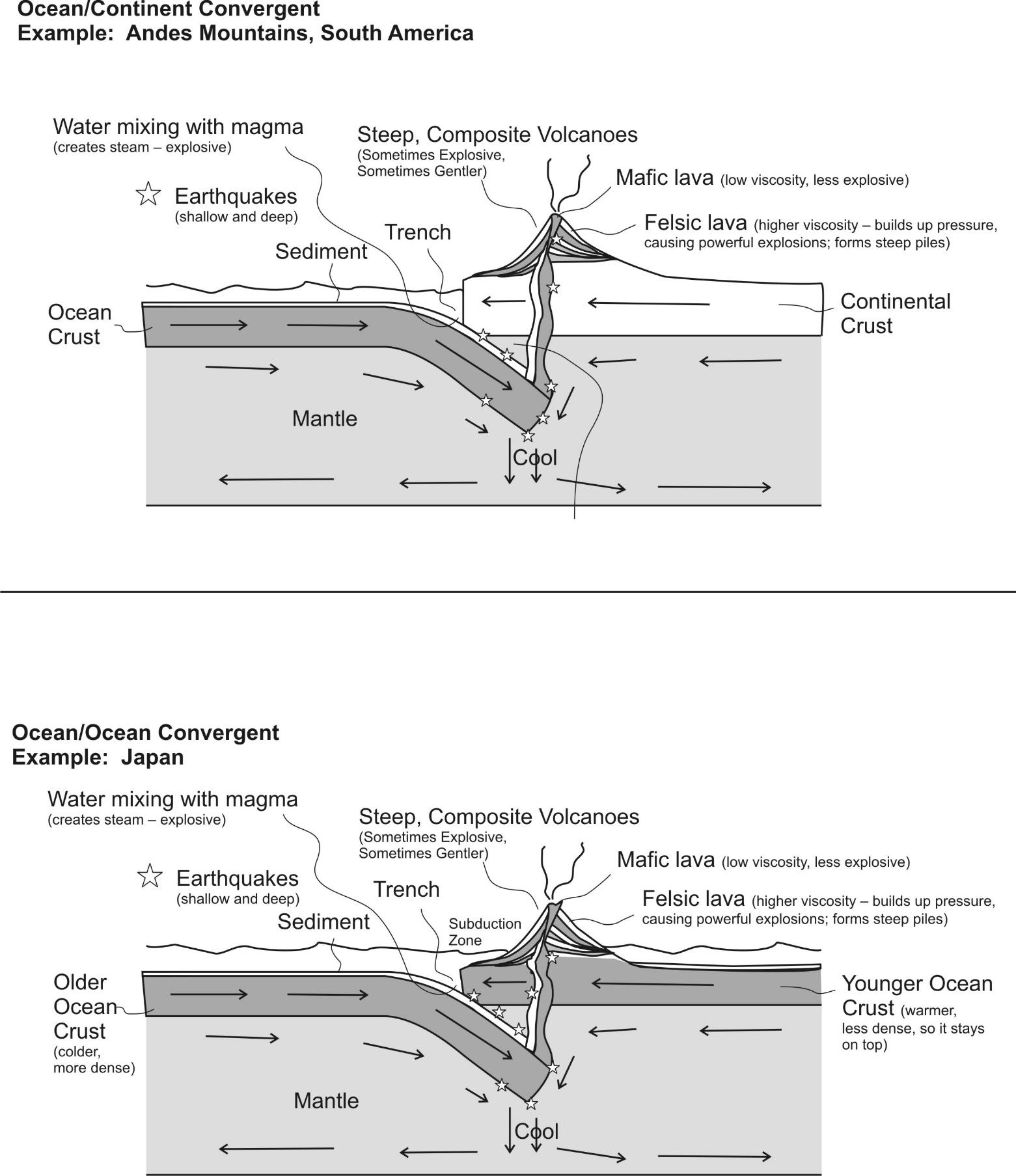
**Characteristics of Mafic Rock:**

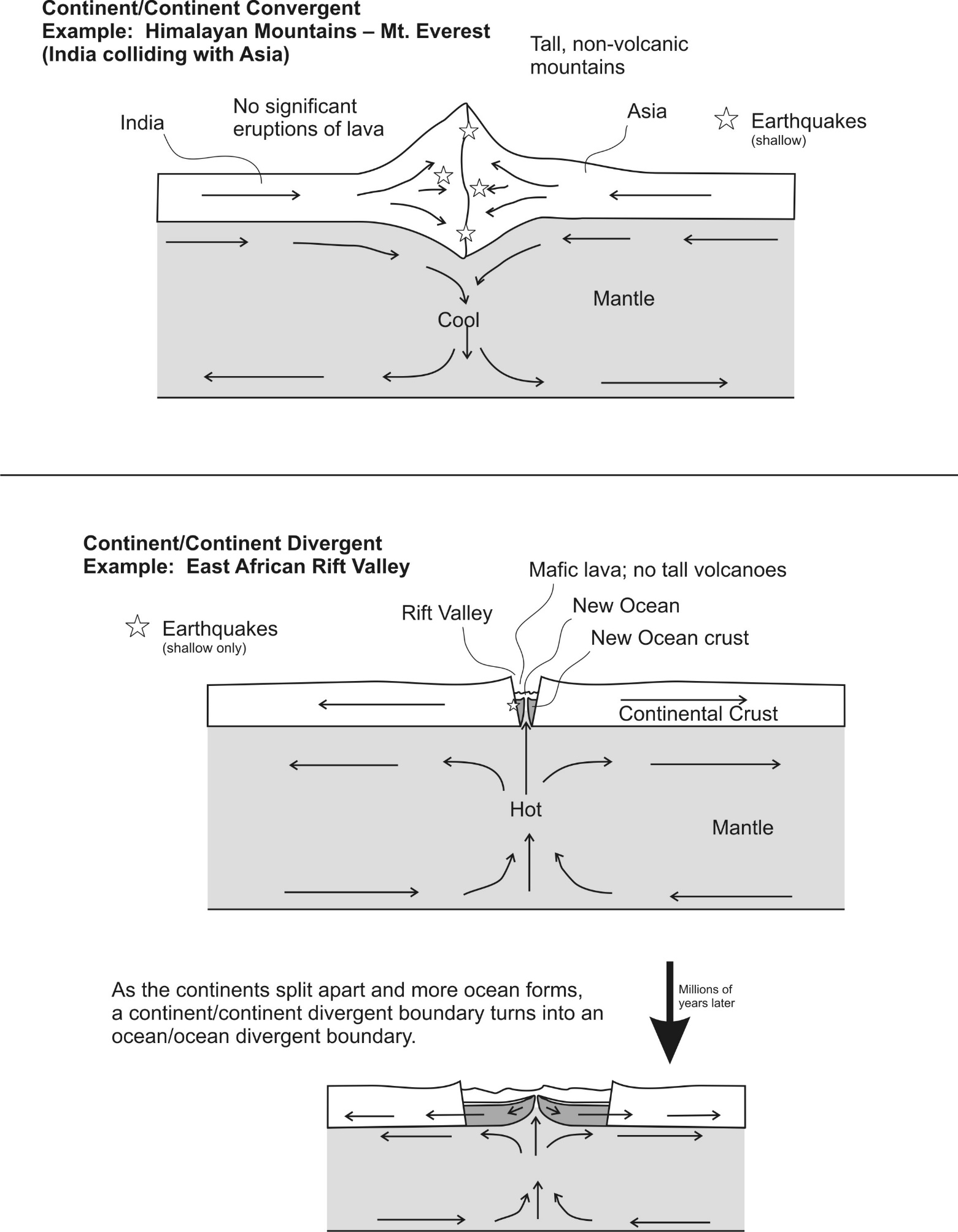
* Dark in color
* More Dense
* Low Viscosity (runny) when turned to magma
  + Does not build up high pressure, so it roduces gentler eruptions
  + Does not pile up, so volcanoes are lower and rounder
* An example of this type of rock is basalt
* Found mostly in the mantle and in ocean crust (because it is dense, and it sinks)
* It is called “mafic” because it contains the elements Magnesium (symbol **Ma**) and Iron (symbol **F**e).

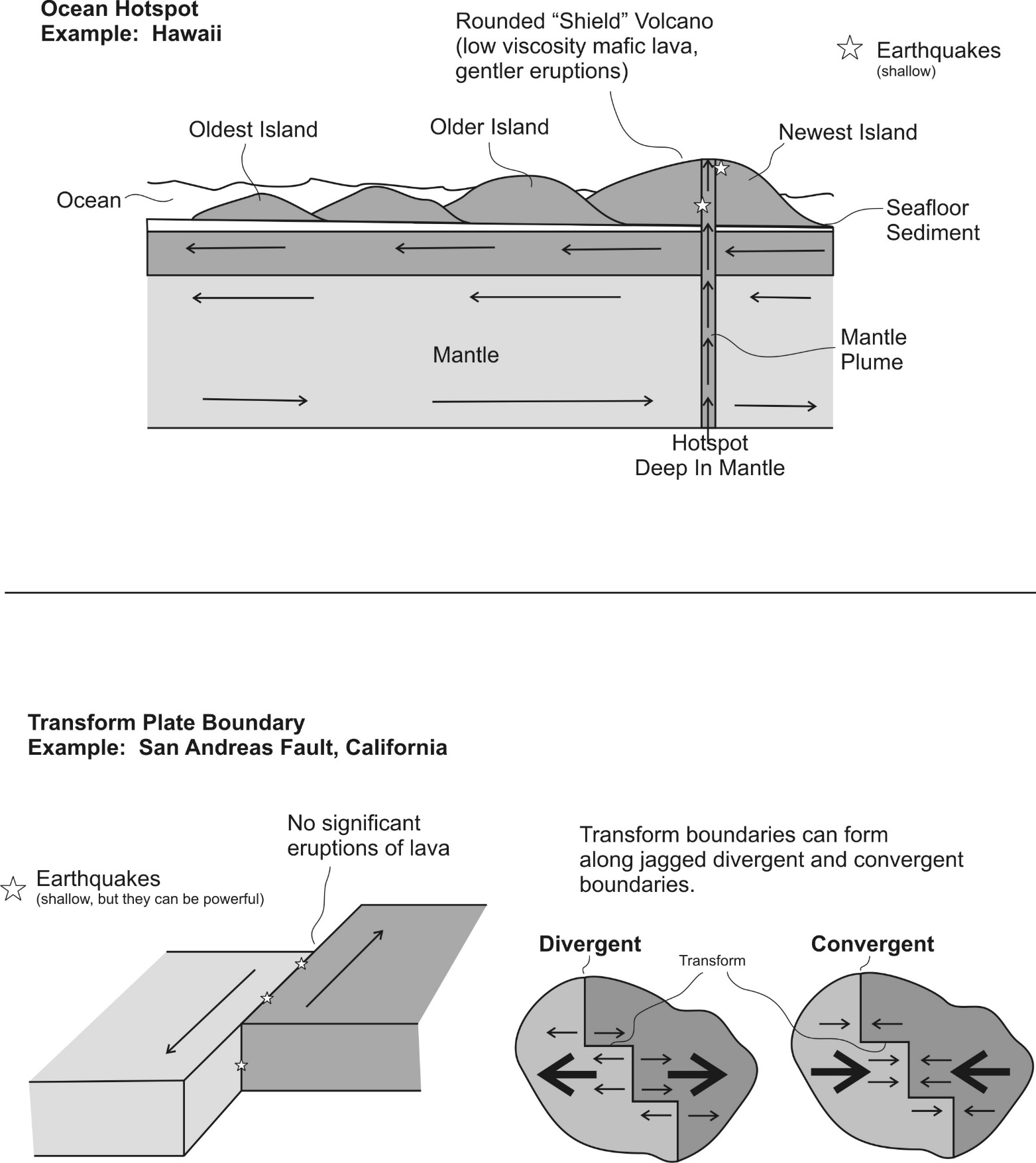
**Characteristics of Felsic Rock:**

* Light in color
* Less dense
* High Viscosity (gooey) when turned to magma
  + Builds up pressure and makes volcanoes more explosive
  + Piles up, so it makes volcanoes steeper
* An example of this type of rock is granite
* Found mostly in continental crust and in seafloor sediment.
* It is called “felsic” because it contains the minerals **Fel**dspar and **Si**lica.

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**Drawing Tectonic Features (Plate Boundaries and Hotspots)**

Feature Name:

Example:

A questionnaire with a box

Description automatically generated with medium confidence

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