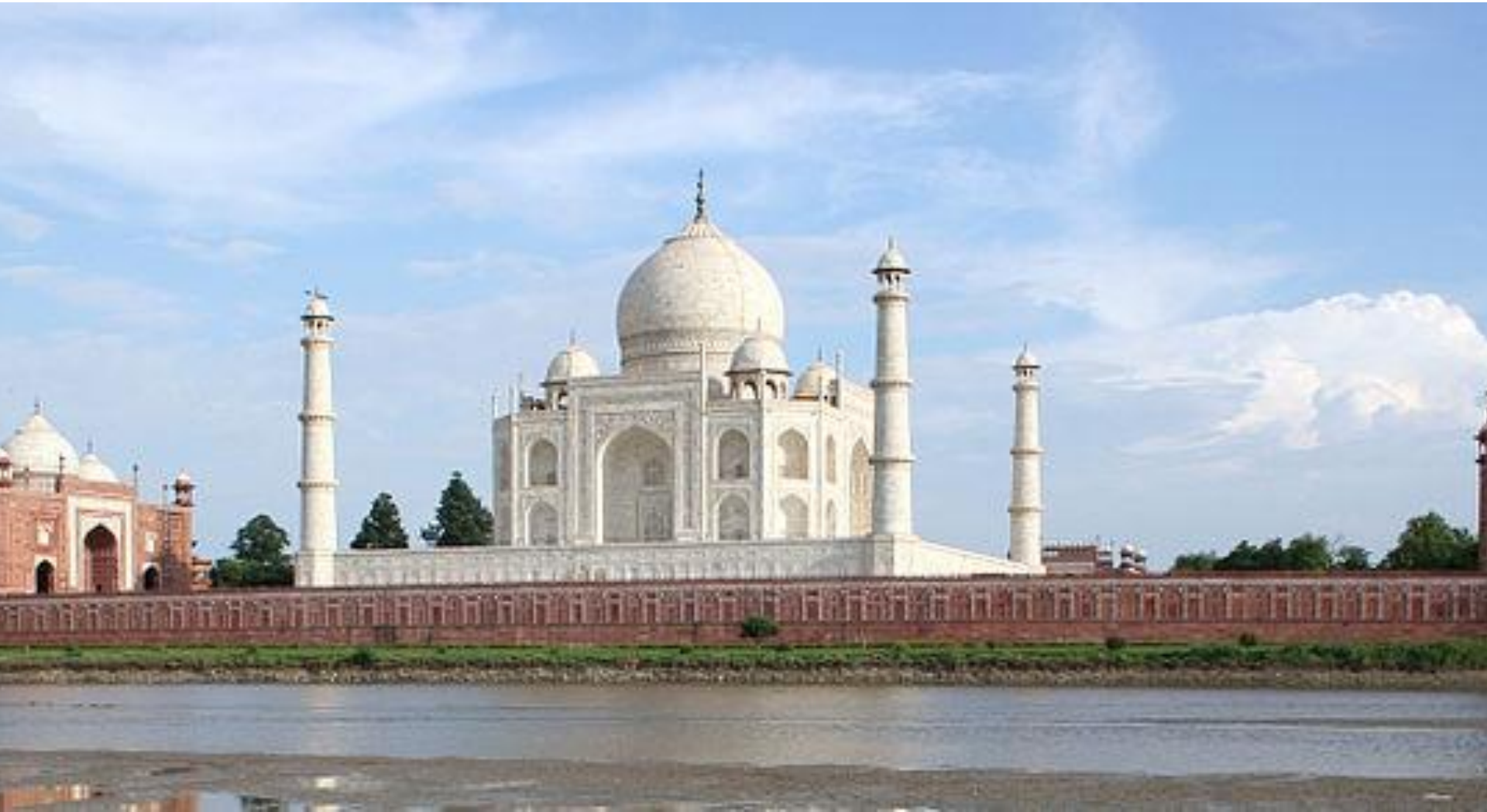


Lesson Objective:

You will be able to describe the process of metamorphic rock formation.

Taj Mahal, India



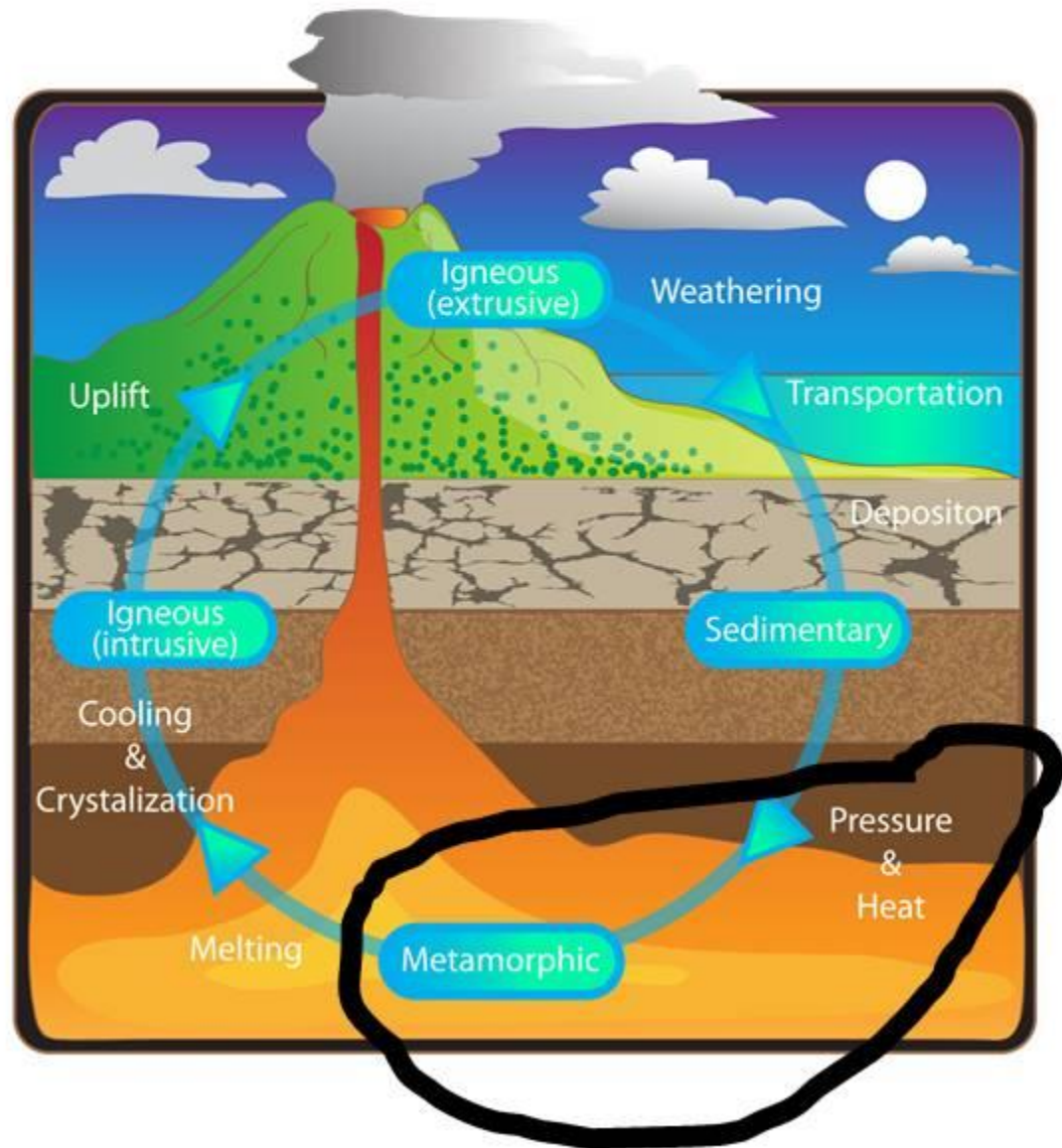
Taj Mahal

- Took over 20 years to build.
- Made out of marble, which is a metamorphic rock.
- The emperor at the time had it built to be the tomb of his wife, who died unexpectedly.



Metamorphic Rocks

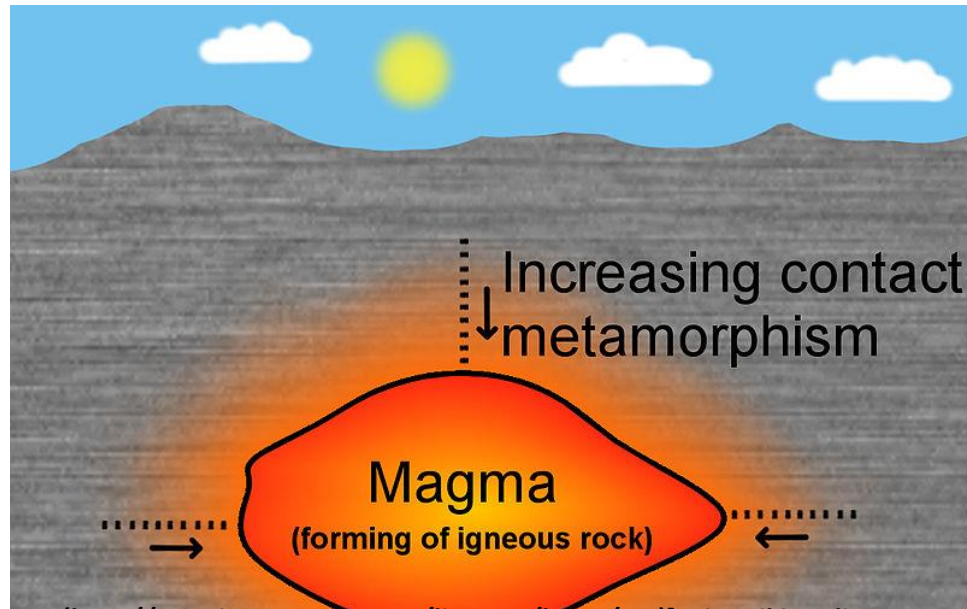
- Metamorphic rocks are formed deep underground due to heat and pressure.



**Metamorphic
rocks are the
least
common rock
on Earth.**

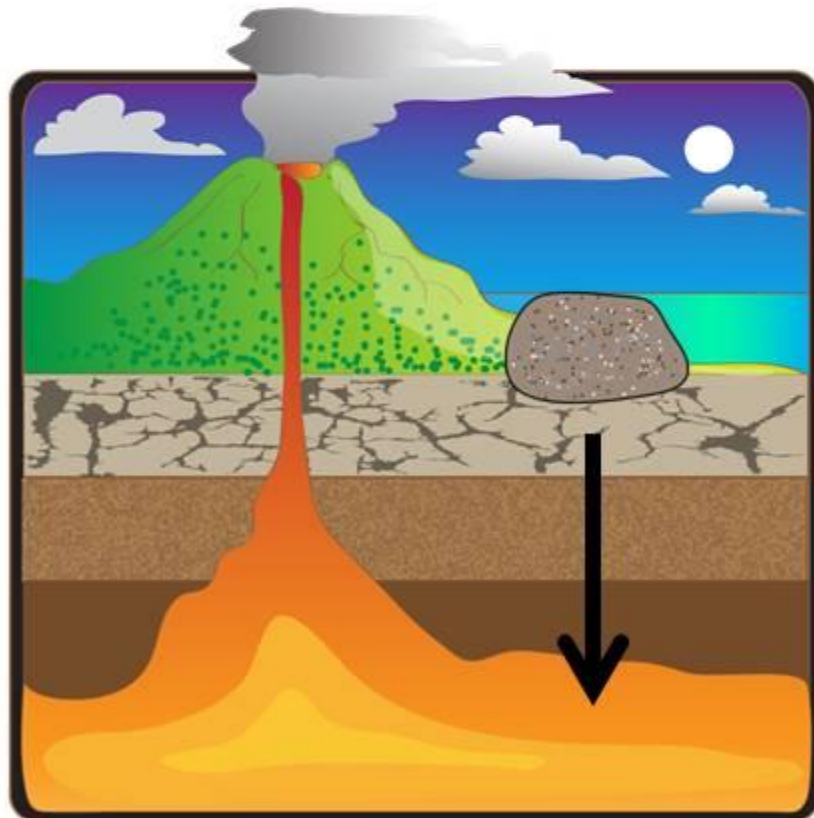
Metamorphic Rocks

- These rocks were once an igneous, sedimentary or even a metamorphic rock.
- They were changed by extreme pressure and heat while deep inside Earth.

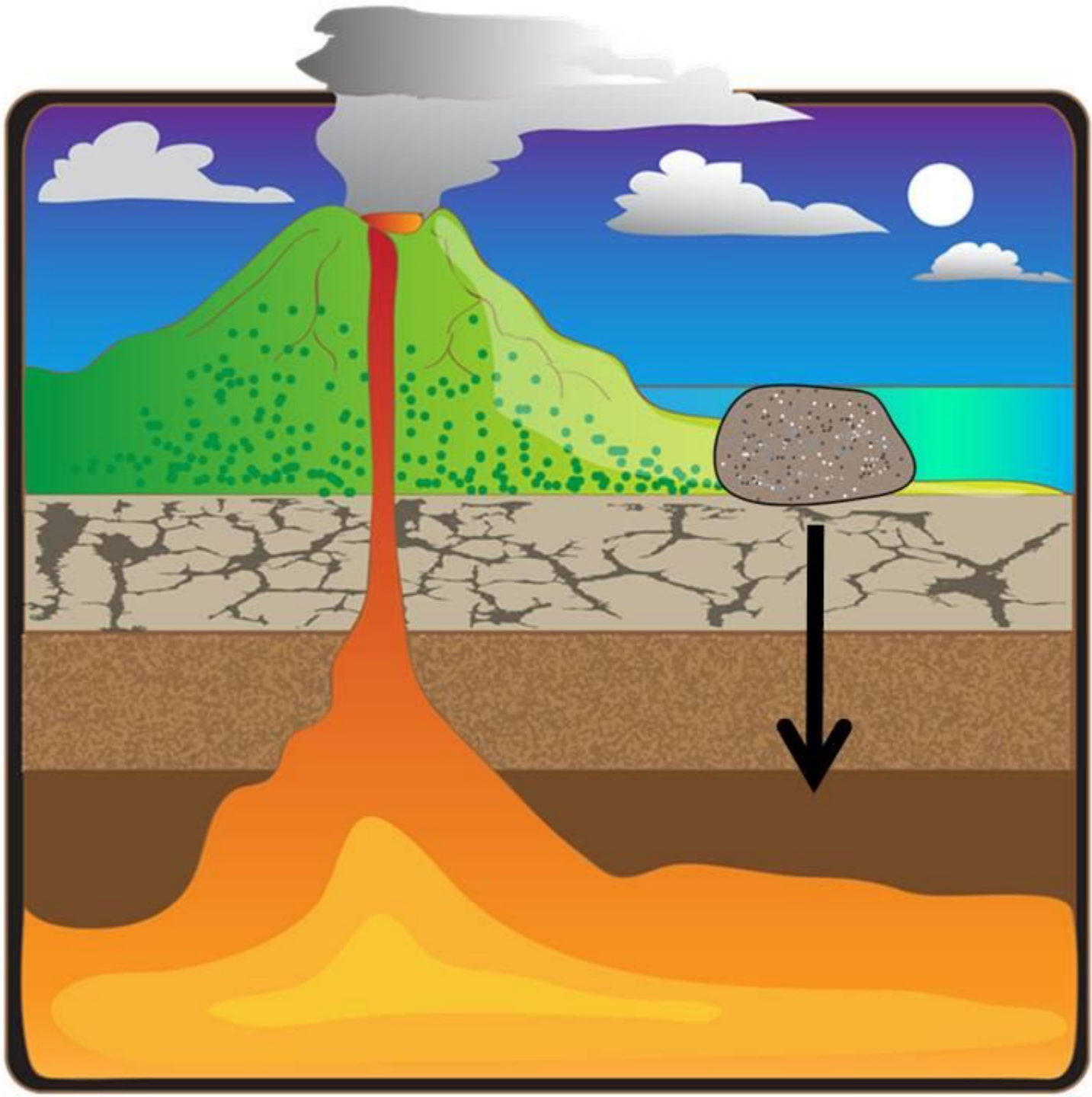


Step 1:

- A sedimentary, igneous, or metamorphic rock is pushed into the ground, where heat and pressure increase.

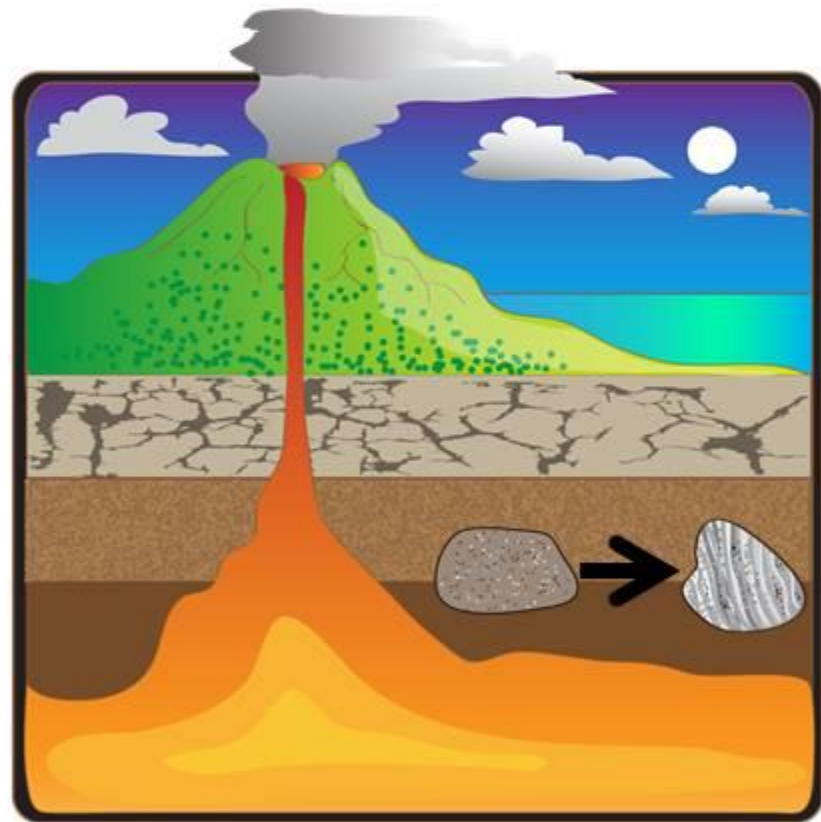


1.

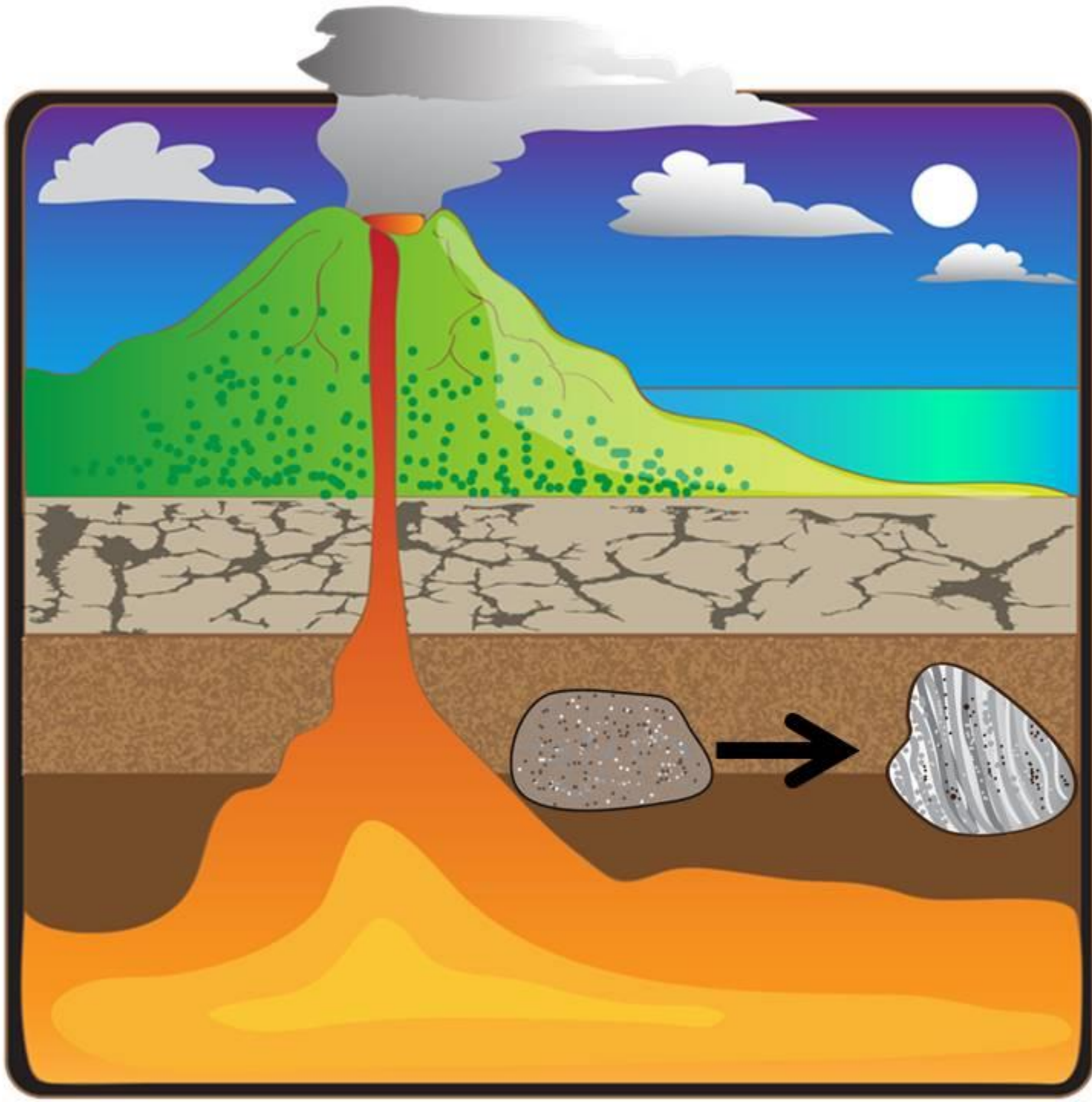


Step 2:

- The heat and pressure change the minerals in the rock, resulting in a new type of rock!

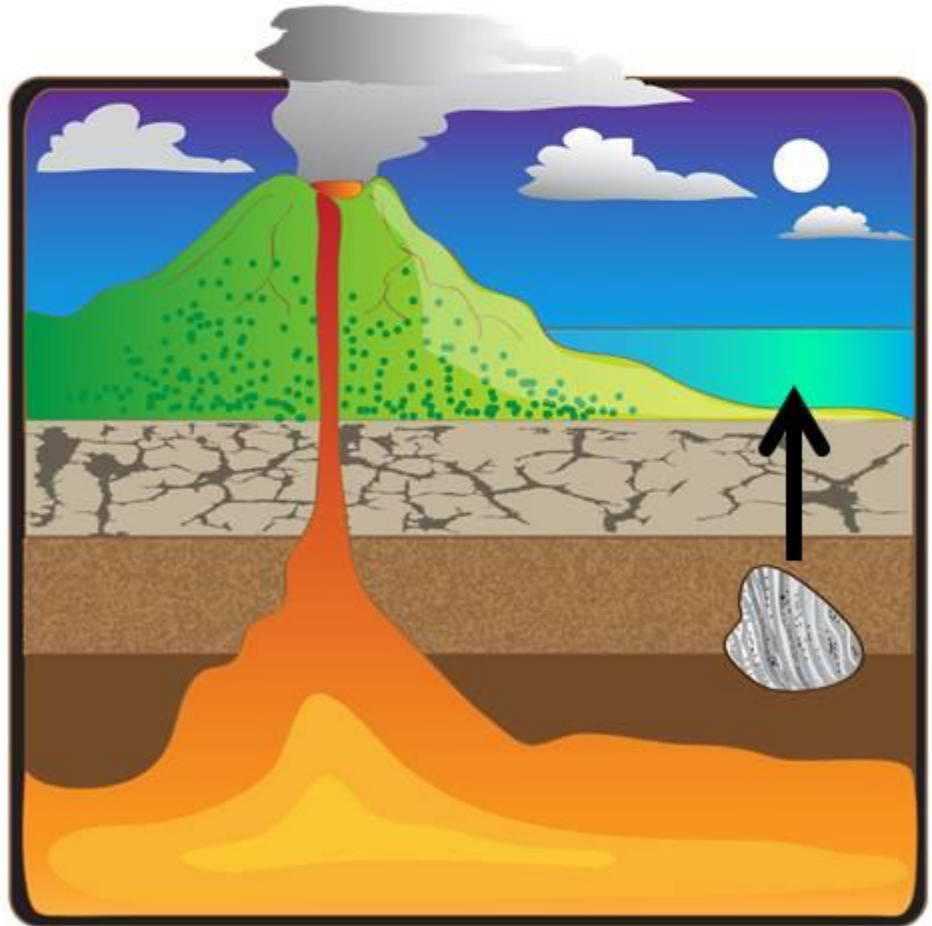


2.

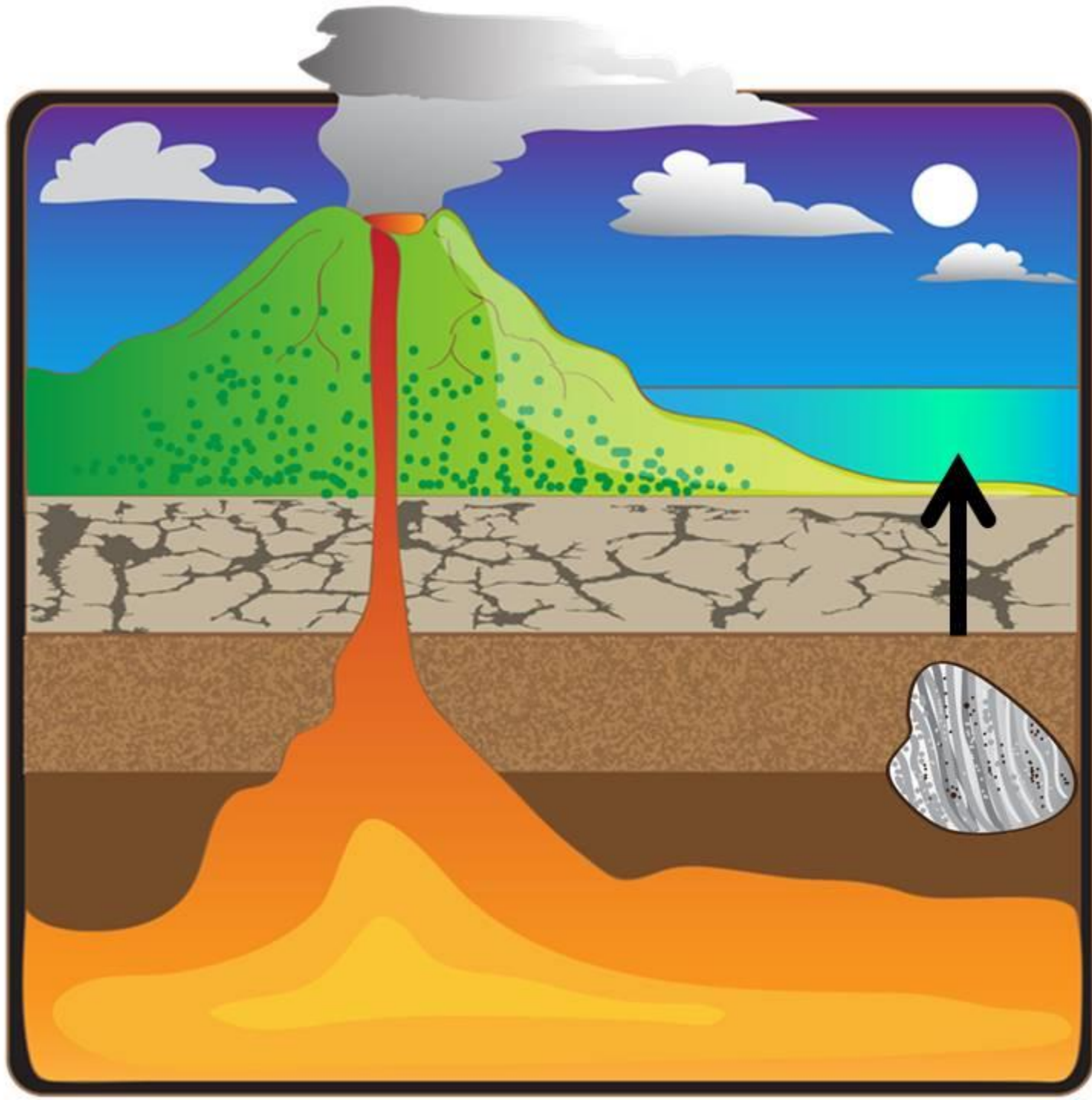


Step 3:

- Uplift and erosion help bring the new metamorphic rock up to the surface of Earth.



3.



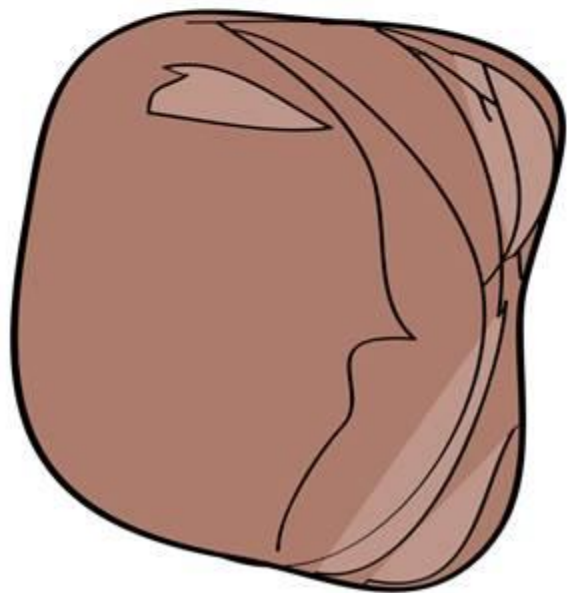
Example: Granite to Gneiss

- Granite, an igneous rock, is pushed deep into Earth.
- The heat and temperature cause it to change into Gneiss.



Example: Shale to Slate

- Shale, a sedimentary rock, found on the bottom of ocean floors gains more pressure from falling sediment.
- Moderate temperature changes this into a new rock called Slate.

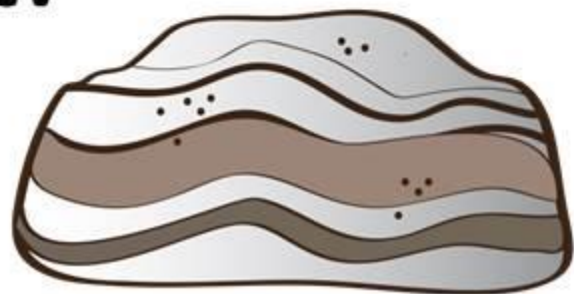




**My name is
slate and I am
a metamorphic
rock!**

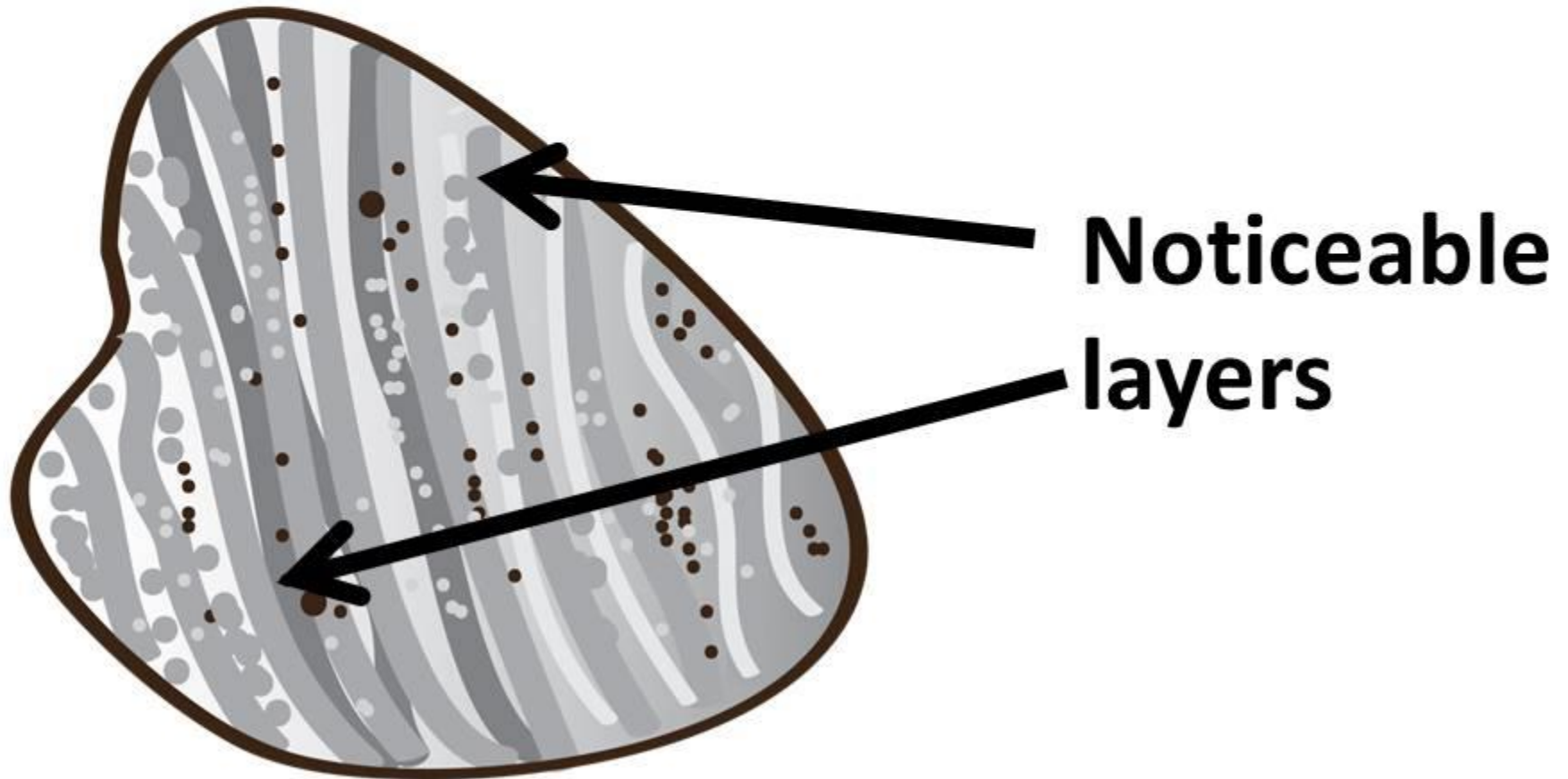
Metamorphic Rocks:

- When turning into a metamorphic rock, the original rock **DOES NOT** melt!
- If it did melt and then cool it would turn into an igneous rock!
- It gets soft and changes shape but it does not completely melt!



Foliated Metamorphic Rock

- Foliated metamorphic rocks have noticeable layers or “bands”.



Non-Foliated Metamorphic Rock

- Non-Foliated metamorphic rocks do not have bands.



The two types of metamorphic rock are –

A – Intrusive & Foliated

B – Extrusive & Non-Foliated

C – Extrusive & Foliated

D – Foliated and Non-Foliated

Which type of metamorphic rock is this picture?

A – Foliated

B – Non-Foliated



How do you know that this is a non-foliated metamorphic rock?

A – It has noticeable layers.

B – It has no bands.

C – It has gas pockets.

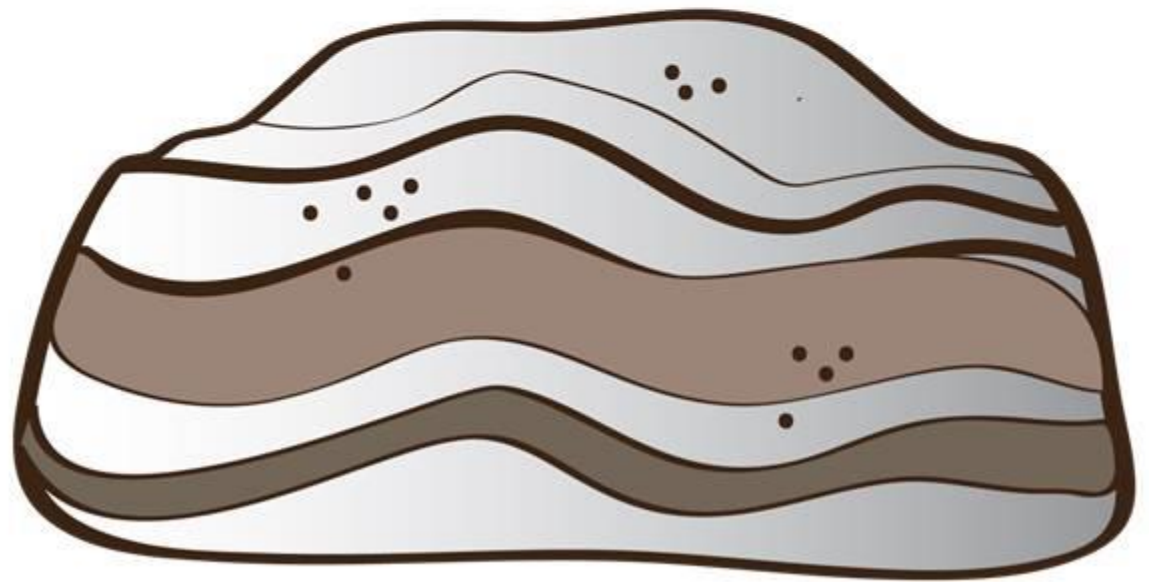
D – It is multiple colors.



Which type of metamorphic rock is this picture?

A – Foliated

B – Non-Foliated



**True or False? In order
to become
metamorphic rock, the
original rock must melt
first.**

Partner Practice