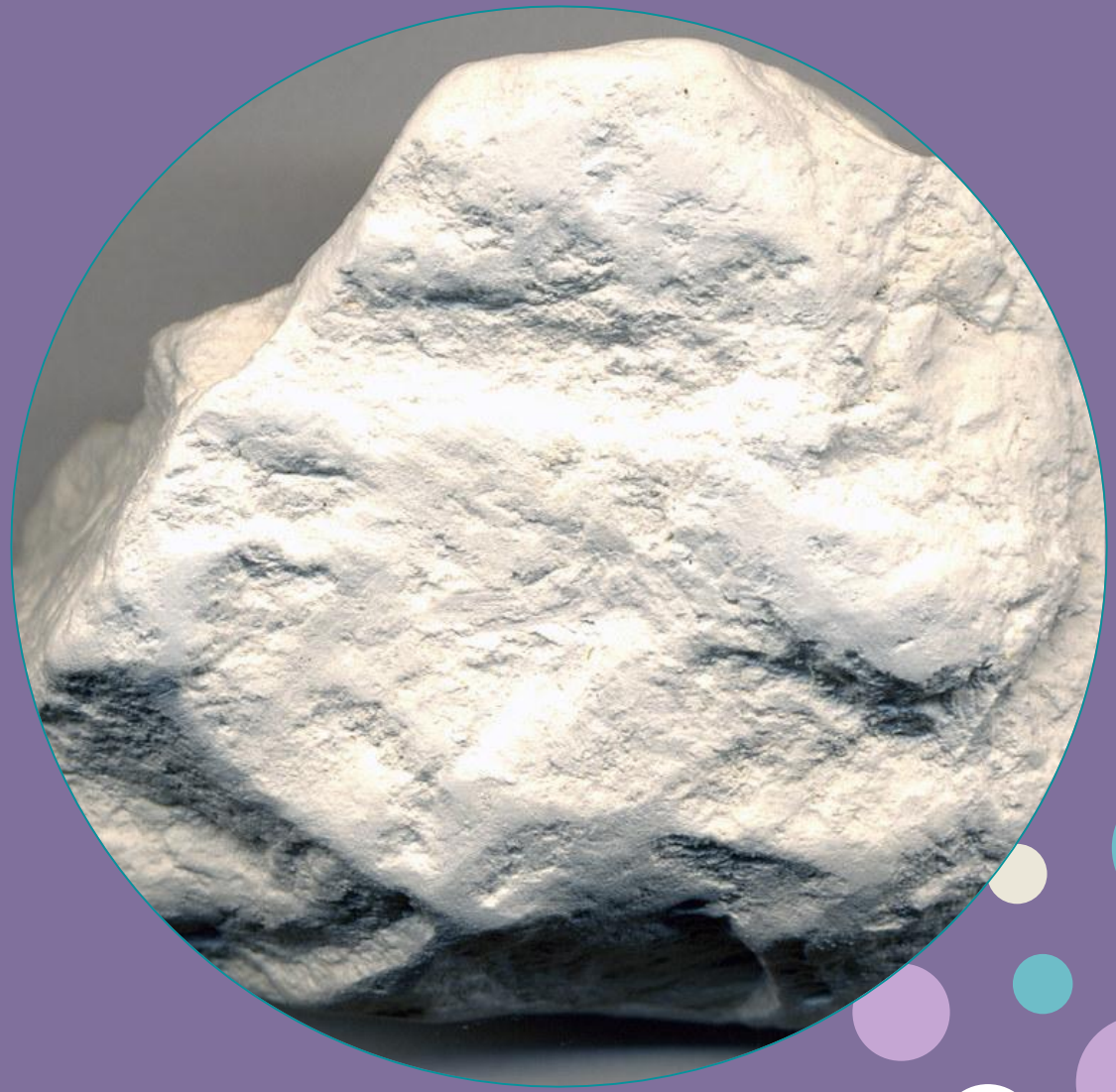
We talked about minerals last week. If you put minerals together, you get rocks!

Look at this rock

How would you describe the rock if you were describing it to someone who could not see it?

Look at this rock

How would you describe the rock if you were describing it to someone who could not see it?



Look at this rock

How would you describe the rock if you were describing it to someone who could not see it?

Are there layers that you can see?

Foliated - when there are bands or layers visible in the rock

Non foliated - when no bands or layers are visible in the rock

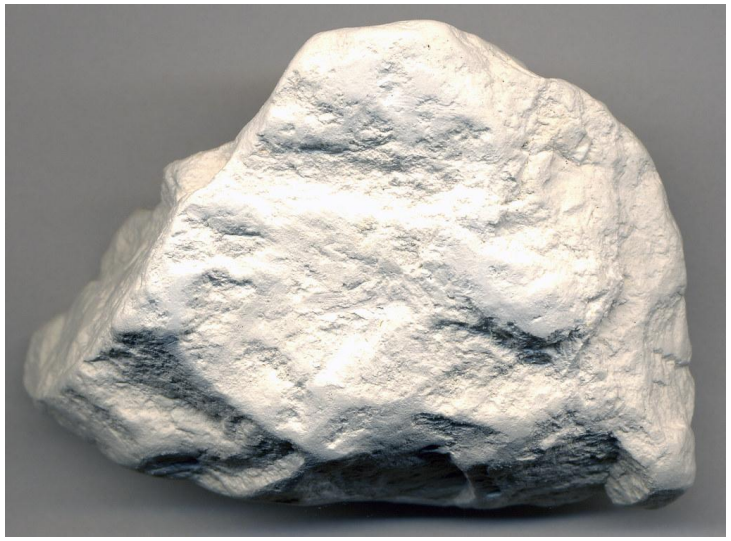
Can you see the minerals in the rock?

Coarse Grained - when you can see the minerals in the rock

Fine Grained - when you cannot see the minerals in the rock

Let's describe our rocks again!

Describe these rocks using our new vocab!




0:02
Clear-pink mineral, looks glassy,
no clear crystal shape, conchoidal
(shell shaped) fractures. ???
QUARTZ

Now it's your turn!

Your assignment:

- go outside and look at rocks
- pick one rock to analyze
- analyze the rock
- take a picture of that rock and describe it using the vocab words we learned today
- upload your picture and your description to our Padlet (link is posted in Google Classroom)
- Once you are done with that, look at more rocks outside!


LET'S ROCK
Many buildings are made from stone that's full of fossils from ancient seas.
squid relative
sea lily
brachiopod
Search for them, and you'll turn a boring errand...
BANK
Ammonite!
...into an amazing adventure through time.
YOURWILDCITY.COM

Explore More Here!

Distribution of rocks in Arizona here

Igneous rocks of Sunset Crater here

Pictures and descriptions of each type of rock here

Article about rocks with review questions here

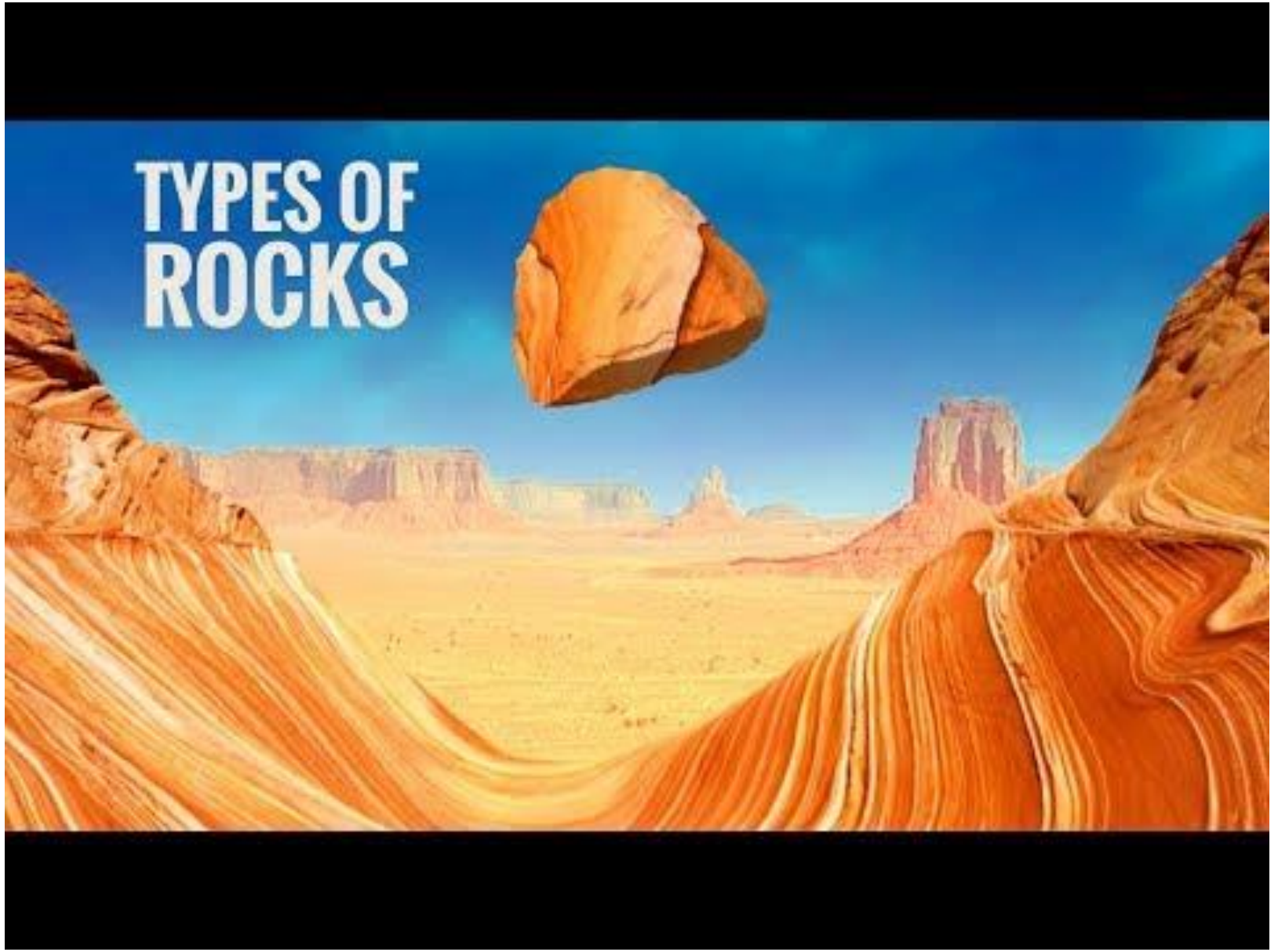
done early

Done early? Check out the following links about rocks!

- Distribution of rocks in Arizona: https://azgs.arizona.edu/photo/arizona-rocks-postcard
- Igneous rocks of Sunset Crater: https://www.pinalgeologymuseum.org/index.php/learn-play/arizona-rocks/224-arizona-rocks-1
- Pictures of three types: https://geology.com/rocks/ (click on each to get a detailed description)
- Article about rocks with review questions at the end: https://courses.lumenlearning.com/sanjac-earthscience/chapter/types-of-rocks/
- Ways to ID rocks: Igneous (http://profharwood.x10host.com/GEOL101/Labs/Igneous/index.htm), Sedimentary (http://profharwood.x10host.com/GEOL101/Labs/Sediment/index.htm), and Metamorphic (http://profharwood.x10host.com/GEOL101/Labs/Metamorf/index.htm)

0

What's the weirdest rock you found when you went outside to look at rocks?


TYPES OF
ROCKS

Igneous Rocks

Formed from molten rock as it cools and hardens

- Intrusive: magma molten rock below earth's surface
- Extrusive: lava molten rock on the surface

Distinguished by their texture

- Coarse grained
- Fine grained
- Obsidian (cools so quickly)
- Scoria and Pumice (air trapped)

Metamorphic Rocks

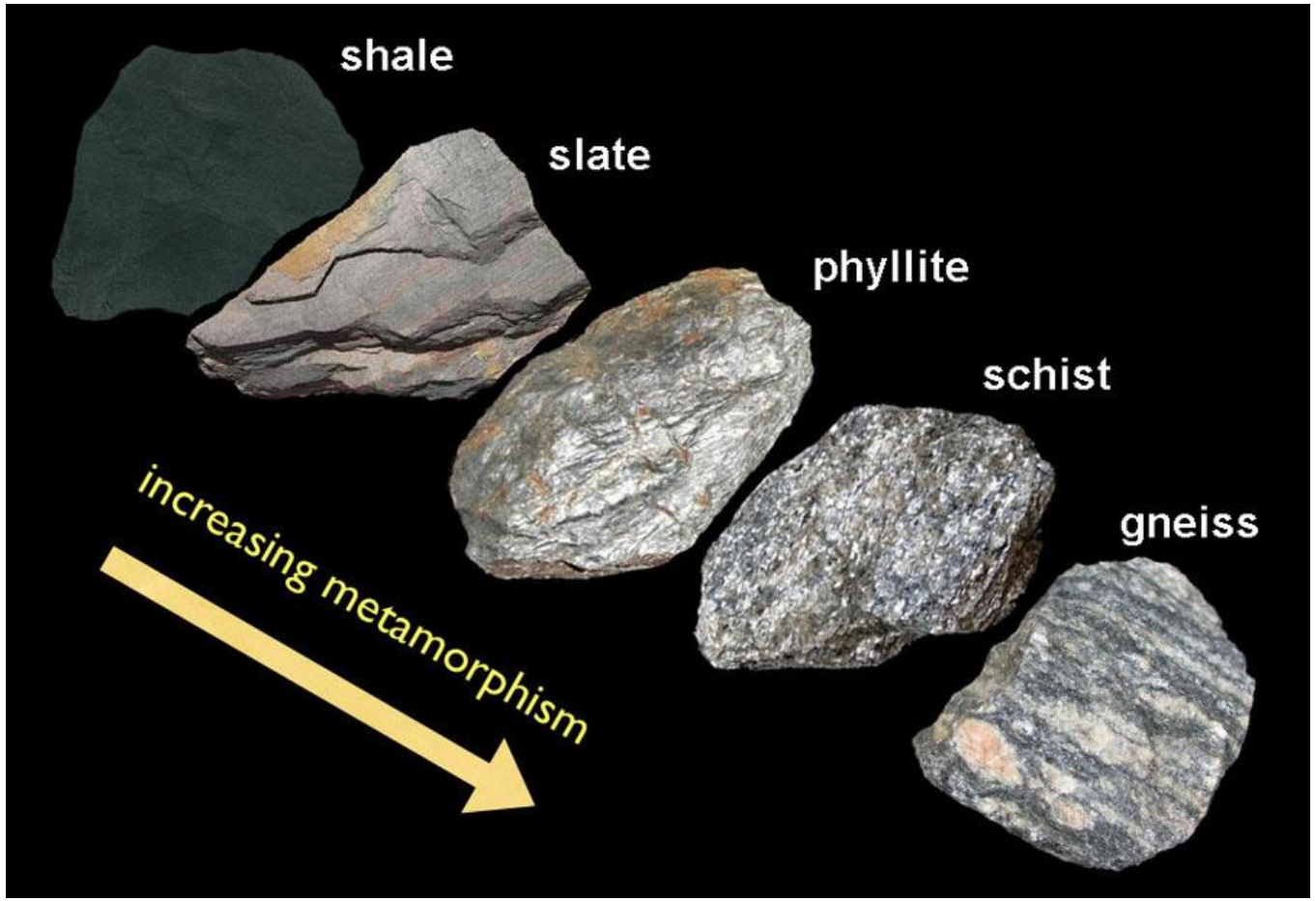
Changed by heat and pressure

- Heat from inside the Earth
- Pressure from everything above it

Form deep in the Earth's crust

Distinguished by its appearance

- Foliated: minerals are arranged in bands or layers
- Non-Foliated: no bands or layers seen


shale
slate
phyllite
schist
gneiss
increasing metamorphism

Sedimentary Rocks

Existing rocks are weather into fragments (sediments)

Sediments are moved, deposited in layers, and are compacted and cemented together

Stratification: look of sediments layered together

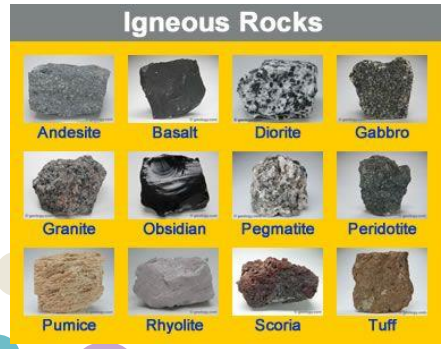
Three types of sedimentary rocks

- Clastic: rocks or mineral fragments stick together
- Chemical: solutions of minerals and water
- Organic: remains of animals or plants

Three Types of Rocks

Igneous

Rock that forms from cooled magma or lava is igneous rock.

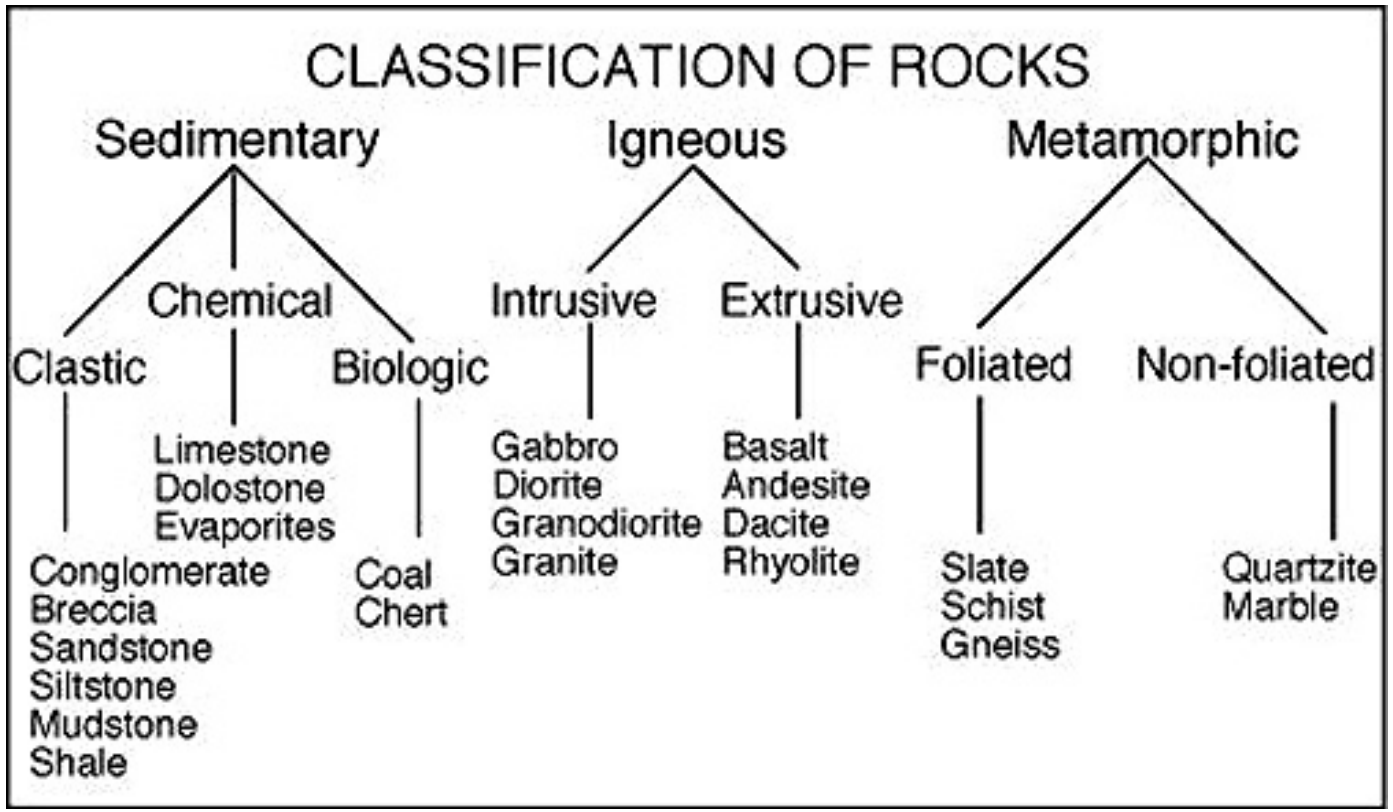


Sedimentary

Rock that forms when small particles of rocks or the remains of plants and animals are pressed and cemented together.

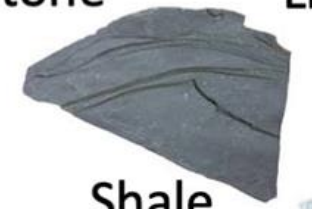
Metamorphic

Rock that forms when a rock is changed by heat or pressure or by chemical reactions.


CLASSIFICATION OF ROCKS
Sedimentary
Igneous
Metamorphic
Chemical
Clastic
Biologic
Intrusive
Extrusive
Foliated
Non-foliated
Limestone
Dolostone
Evaporites
Gabbro
Diorite
Granodiorite
Granite
Basalt
Andesite
Dacite
Rhyolite
Conglomerate
Breccia
Sandstone
Siltstone
Mudstone
Shale
Coal
Chert
Slate
Schist
Gneiss
Quartzite
Marble

https://geology.com/rocks/

TYPES OF ROCKS

IGNEOUS	SEDIMENTARY	METAMORPHIC
 Granite	 Sandstone	 Marble
 Scoria	 Limestone	 Slate
 Pumice	 Shale	 Quartzite
 Obsidian	 Conglomerate	 Gneiss
	 Gypsum	

When you went outside to find a rock to analyze, did you find each of the three types? Why or why not?

The Rock refuses to confirm whether he's sedimentary, igneous or metamorphic

How old were the rocks you found?


Relative Dating
What came first?

Determining Relative Age

1. Position of the layer
2. Intrusions are younger than the rock around it
3. Faults are always younger than the rock it cuts through
4. Using fossils if there are any
5. Changes in the rock (folding, etc) can give clues to age

Determining Absolute Age

Radioactive dating

1. potassium-argon dating
2. carbon-14 dating

Absolute Dating Methods

This is the Taj Mahal.
What does it have to do with rocks?

What about the pyramids?

Think about a famous landmark and it probably is involved with rocks in some way!

(check out this)

Uses of rocks

Explore More Here!

Uses of rocks here

Chart (on second page) of uses here

Museum exhibition on minerals and rocks here

Article about uses of rocks through history here

Types of rocks from space here and here