

# Lesson – Sedimentary Rocks

THE FOLLOWING **VIDEO** HAS BEEN APPROVED FOR  
**ALL AUDIENCES**  
BY THE EARTH SCIENCE TEACHERS ASSOCIATION OF AMERICA , INC

THE VIDEO HAS BEEN RATED

<b>I</b>	INTELLIGENT
	UNDER 15 REQUIRES TEACHER ASSISTANCE
STRONG EARTH SCIENCE LANGUAGE, DETAILED DIAGRAMS, AND SUPER AWESOMENESS	

- I can name how a sedimentary rocks form
- I can describe the three different types of sedimentary rocks
- I can describe characteristics of sedimentary rocks



# Sedimentary Rocks

- Rocks that form from other rocks or sediments

**Sediments = Clasts**

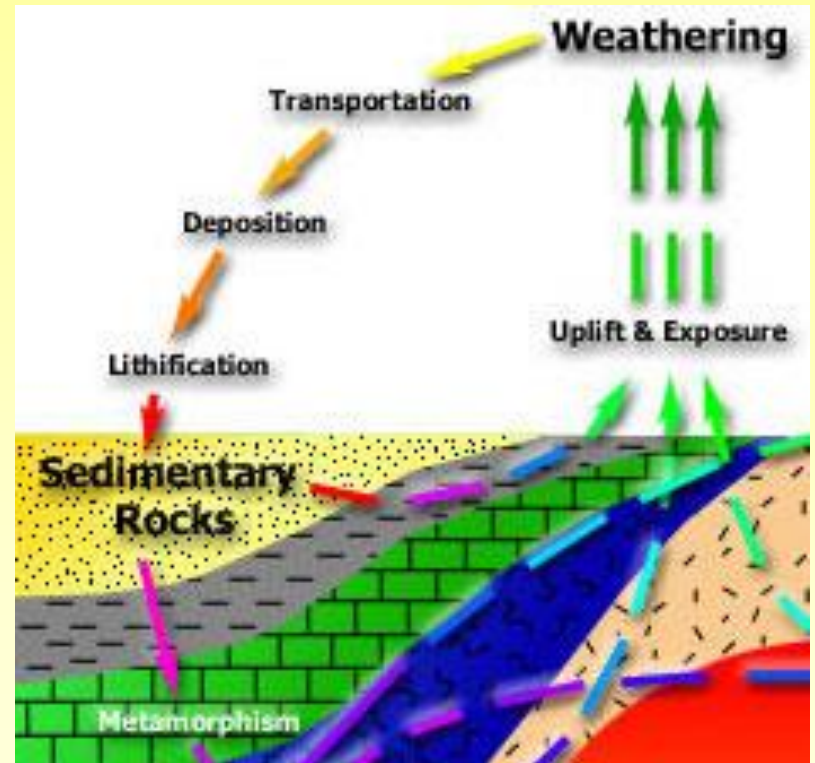
## Fun Rock Fact

70% of all rocks found on Earth are sedimentary rocks!



# Formation

- form from some kind of weathering
- Most form under water

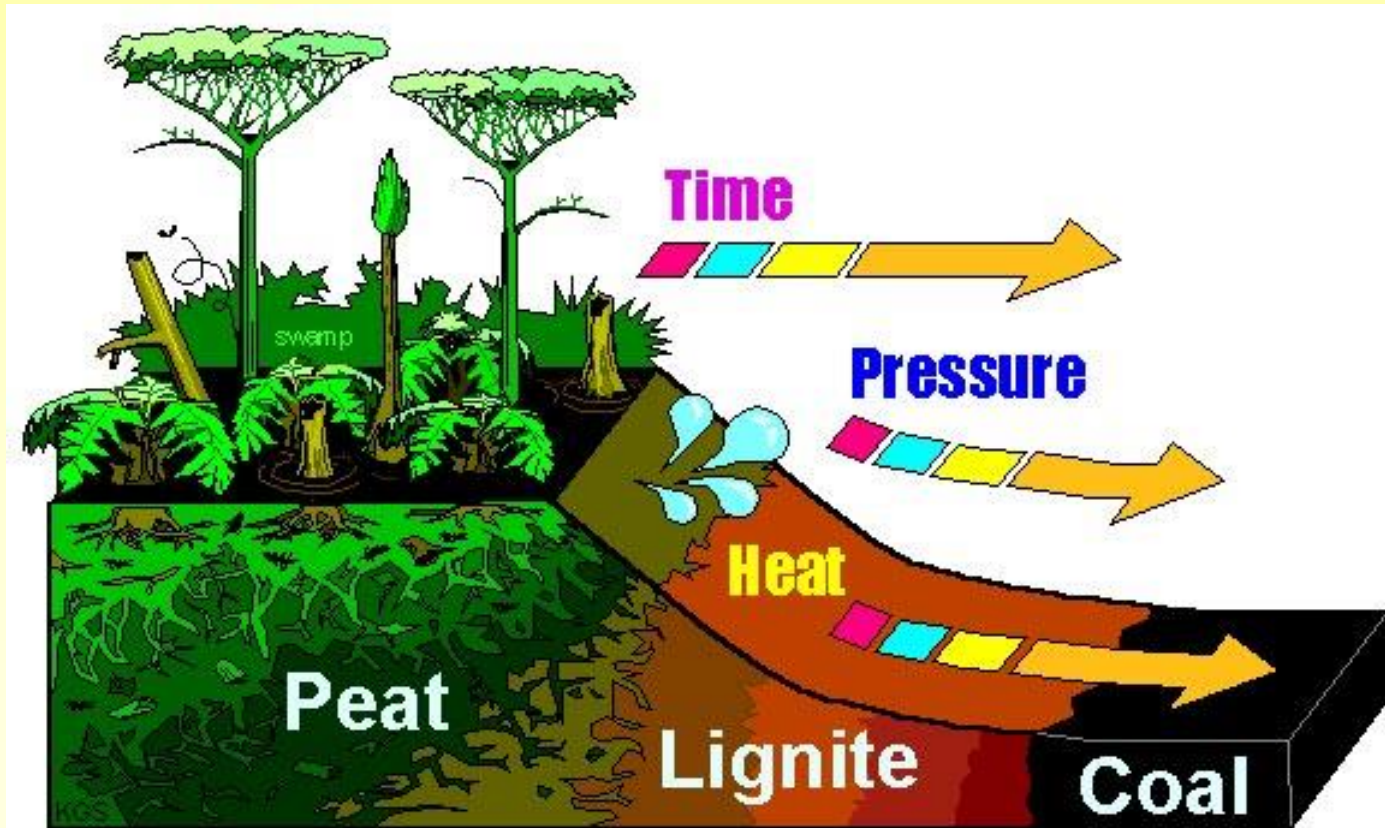


# Compaction

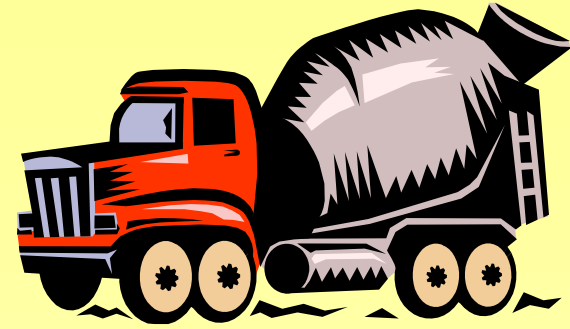
What is compaction?



- When sediments are compressed together



# Cementation



What do you think cementation is?

- When clasts (sediments) are glued or cemented together forming a clastic rock

A *clastic sedimentary rock* is a rock that is largely composed of solid sediments

For example:



Sandstone



Conglomerate



Shale

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# Organic Process

*Bioclastic sedimentary rock* is any rock made by living things

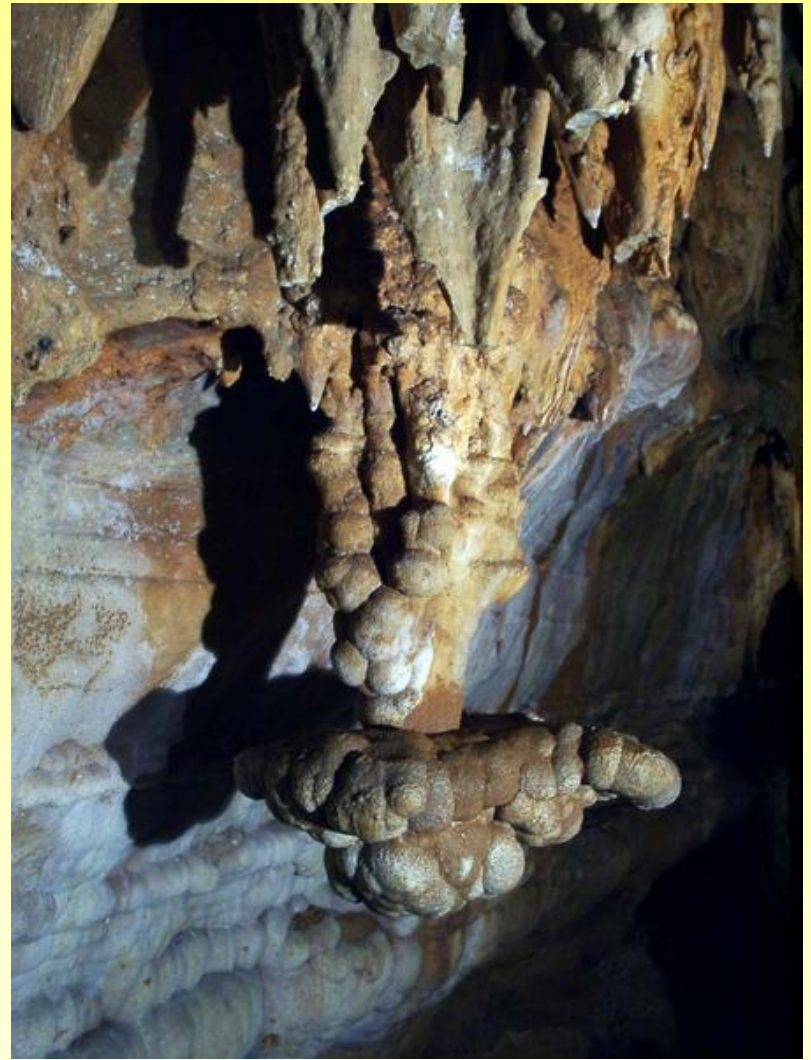
Fossil Limestone →





# Chemical Action

- When minerals dissolved in liquid crystals from chemical precipitates (drop out) & evaporites form ...



*Chemical sedimentary rocks* which are crystalline masses of inter-grown mineral crystals

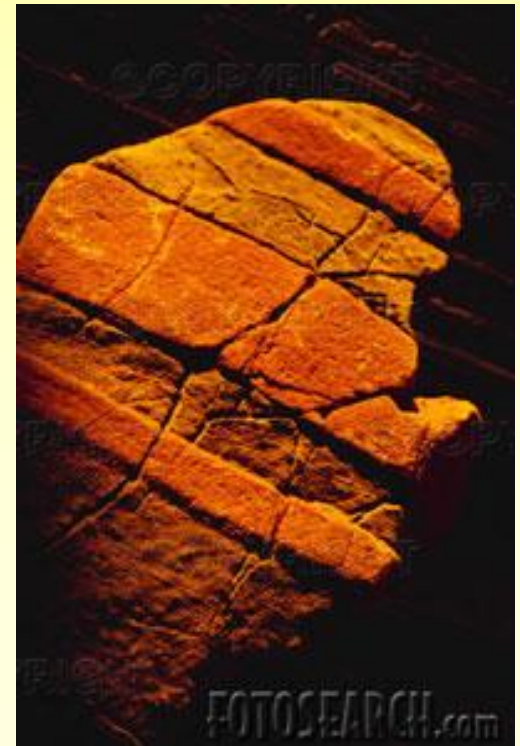
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# Sedimentary Rock Characteristics

- Most are made of clasts which are usually...
  - rounded from weathering
  - Sorted by size
  - Layered



← Siltstone -  
particles are  
well sorted





- Fossils - any evidence of former life



- Features like - mud cracks or rain drops showing that they formed at Earth's solid surface


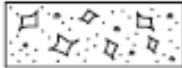
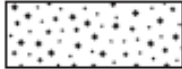


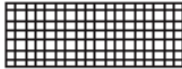


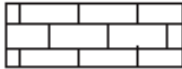



↑ Mud cracks  
← Rain drops

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# Scheme for Sedimentary Rock Identification


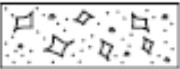

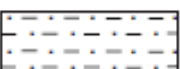

ESRT Pg 7

INORGANIC LAND-DERIVED SEDIMENTARY ROCKS					
TEXTURE	GRAIN SIZE	COMPOSITION	COMMENTS	ROCK NAME	MAP SYMBOL
Clastic (fragmental)	Pebbles, cobbles, and/or boulders embedded in sand, silt, and/or clay	Mostly <u>quartz,</u> <u>feldspar,</u> and <u>clay minerals;</u> may contain fragments of other rocks and minerals	Rounded fragments	Conglomerate	
			Angular fragments	Breccia	
	Sand (0.006 to 0.2 cm)		Fine to coarse	Sandstone	
	Silt (0.0004 to 0.006 cm)		Very fine grain	Siltstone	
Clay (less than 0.0004 cm)	Compact; may split easily	Shale			
CHEMICALLY AND/OR ORGANICALLY FORMED SEDIMENTARY ROCKS					
TEXTURE	GRAIN SIZE	COMPOSITION	COMMENTS	ROCK NAME	MAP SYMBOL
Crystalline	Fine to coarse crystals	Halite	Crystals from chemical <u>precipitates</u> and <u>evaporites</u>	Rock salt	
		Gypsum		Rock gypsum	
		Dolomite		Dolostone	
Crystalline or bioclastic	Microscopic to very coarse	Calcite	Precipitates of biologic origin or cemented shell fragments	Limestone	
Bioclastic		Carbon	Compacted plant remains	Bituminous coal	

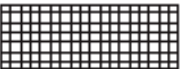

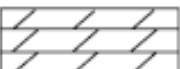
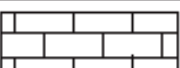

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## INORGANIC LAND-DERIVED SEDIMENTARY ROCKS


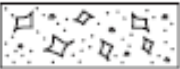

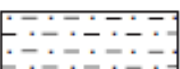

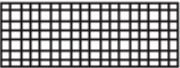

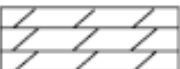
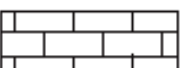

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			Angular fragments	Breccia	
	Sand (0.006 to 0.2 cm)		Fine to coarse	Sandstone	
	Silt (0.0004 to 0.006 cm)		Very fine grain	Siltstone	
	Clay (less than 0.0004 cm)	Compact; may split easily		Shale	

## CHEMICALLY AND/OR ORGANICALLY FORMED SEDIMENTARY ROCKS


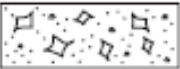

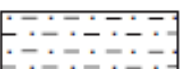

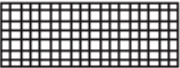

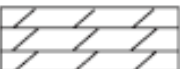
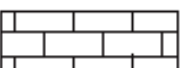

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Bioclastic		Carbon	Compacted plant remains	Bituminous coal	

According to ESRT, inorganic land derived sediments are classified on the basis of



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According to ESRT which type of sedimentary rock contains the greatest range of particle sizes?

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According to ESRT which sedimentary rock could form as a result of evaporation?

- I can name how a sedimentary rocks form
- I can describe the three different types of sedimentary rocks
- I can describe characteristics of sedimentary rocks
- I can use the Sedimentary Rock Chart