



SEMINARI DE CIÈNCIES NATURALS, INSTITUT JAUME CALLÍS, VIC.

P9. THE ROCK CYCLE IN CHOCOLATE

INTRODUCTION

song:

https://www.youtube.com/watch?time_continue=3&v=r68iEwYdbh4&feature=emb_logo

the experiment: <https://www.youtube.com/watch?v=98F9h6cF0gs>

<https://www.youtube.com/watch?v=4tyxtsvvK2I>

interactive rock cycle:

http://www.classzone.com/books/earth_science/terc/content/investigations/es0602/es0602page03.cfm

Rocks can change from one type to another over a long period of time (millions and millions of years)

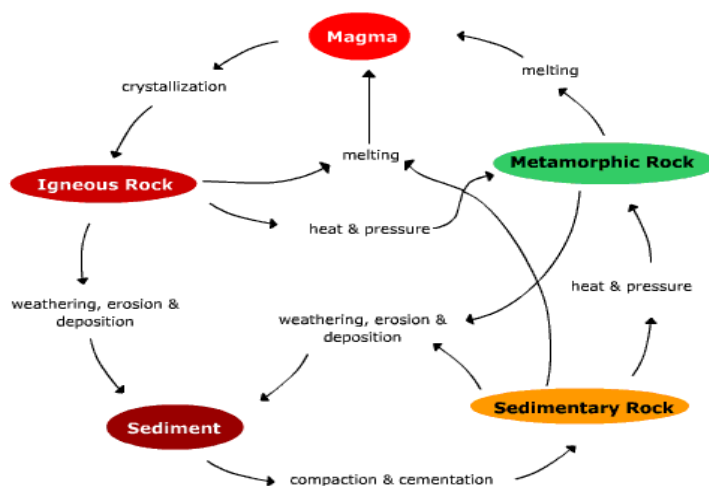
MAKE A HYPOTHESIS: We are going to puting dark, White and milk chocolate .Do you think the diferents types of chocolate will be eroded, melt and cold down the same manner?, What you think happen?

MATERIAL

Chocolate, paper, grater or knife, matches

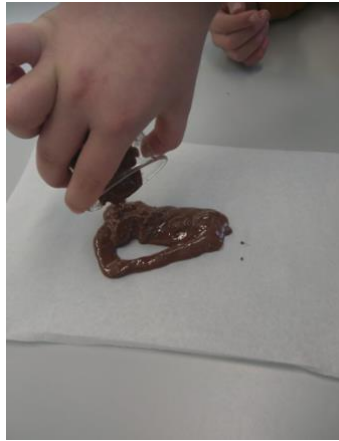
PROCEDURE

Using chocolate, we're going to simulate different processes in the rock cycle and you will have to answer which process we are referring to:



ACTION	PROCESS IN THE ROCK CYCLE
Scrape fragments off the chocolate using a cheese grater or a knife	
Drop the chocolate fragments on a piece of paper	
Acumulate chocolate fragments on a piece of paper	
Squash the chocolate fragments from the top to the bottom with the palm of your hand	
Holding your hands vertically, press the chocolate mass in order to fold it	
Warm the chocolate with a match until the chocolate melts	
Let the liquid chocolate fall onto a piece of paper and solidify	





RESULTS

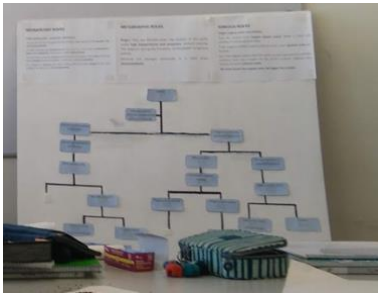
Take photos or draw step by step all of the results you've gotten. Answer the questions below:

1. a) Which rock cycle processes can not be demonstrated by this simple model?
For instance, extrusion, uplift...?
2. b) Could you think other models to demonstrate the processes you said above?



CONCLUSIONS

What happened to the chocolate? Describe how both types of chocolate melted. Did both types of chocolate melt the same? Be sure to include viscosity, cooled down, crystallizing, eroded, lithification the same manner?.....



Video orla presentatiotion:

<https://drive.google.com/drive/u/1/folders/1jjN-ASnyIZOxaoRpnpoCZTuGKJNS6s7>

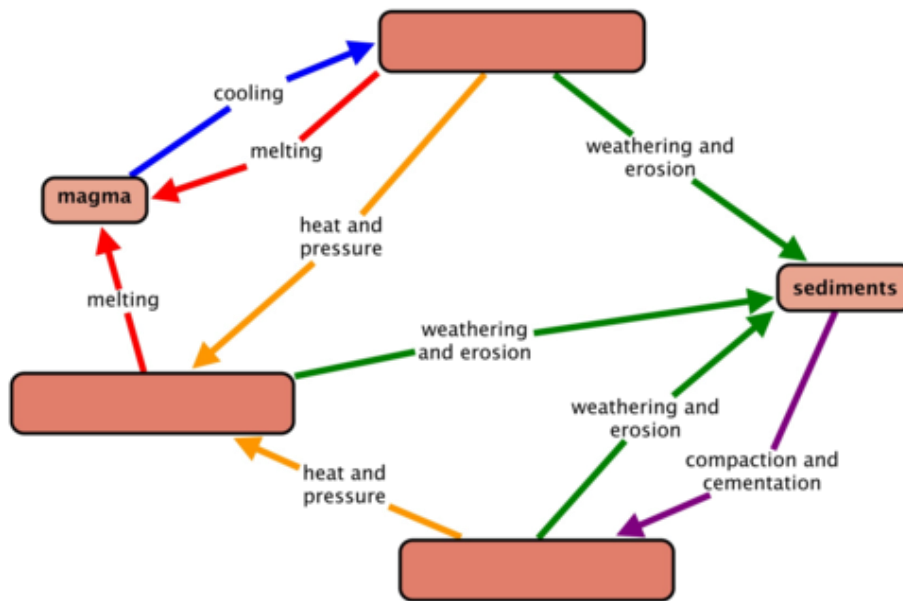


Activities

1. Translate into English or Catalan (a-i) and answer (j): (1)

- a) Igneous rock:
- b. Metamorphic rock:
- c. : roca sedimentària
- d. What conditions are needed for metamorphic rocks to form?
- e. Obsidian is a rock. It has no crystals because magma has cooled very quickly, it has a surface (like a broken glass).
- f. Melting:
- g. The rock cycle:
- h. A sedimentary rock exposed to heat and pressure will become:

2.Observe this Picture. Fill in the gaps and answer the questions below: (1)



<http://www.mstworkbooks.co.za/natural-sciences/gr9/gr9-eb-0>

ROCK CYCLE IN CHOCOLATE

We **scrape** fragments off the chocolate to **simulate weathering and erosion**
 We **scrape** fragments off the chocolate using a **cheese grater (a knife, a fork)** to **simulate**.....

We **pile up** these fragments in **layers** into a **beaker** to **simulate strata**
 We **drop** " " " " " " "
 We **accumulate**

We **squash** the chocolate fragments from the top to the bottom to simulate **compaction** and **cementation**
 We **press**.....

We **warm** the chocolate fragments to simulate magma's formation
 We **warm** the chocolate fragments using a **thermostatic bath**

We **pour the liquid chocolate** on a piece of **wax paper**
 We " **melted**.....

We **let** the melted chocolate **cool slowly** in the **lab**
 We **let** the melted chocolate **cool quickly** in the **freezer**