

**Secondary Science SBE  
Lesson Plan Framework**

**Lesson Title: Physical Weathering**

**Group: 8 Y    Location:    Date/Time: 1<sup>st</sup> May /13h15 to 14h15**

**Learning Objectives: Students should learn:**

- to look at how changes in temperature can affect rocks at the earth's surface.

**Learning Outcomes: Most students should be able to:**

- Explain how water causes rocks to expand and break up and also understanding the meaning of physical weathering.
- Recognise that continually heating and cooling rocks cause them to break up.

**National Curriculum/Syllabus References (incl. reference to previous KS)**

Ks3 Biology, Exploring science text book (pages 82-83), Rocks and Weathering.  
NC 4.

**Links to other areas**

Literacy, visual, verbal, kinaesthetic learning styles and developing practical investigation skills.

**Previous assessment details informing this lesson.**

Discussion with class teacher and previous class observations.

**Differentiation**

By questioning  
By use of stimulus material  
By pace of the lesson and relevant use of starters  
By support  
By guided modelling

**Health and Safety**

Lesson safe for pupils but see risk assessment attached for demonstration.

## Lesson Development

Timing (min)	Teacher activity	Pupil activity	# Resources	Assessment Items
3minutes	Taking the register	Pupils will pay attention to the register.	Teacher planner	Homework  Q+A by assessing pupils knowledge about the different types and names of rocks.
2minutes	Pupils will receive the books with the homework marks.	Pupils will know their homework marks.	Exercise books	
10 minutes	Sharing lesson aim And making a brief review about different types of rocks by using natural examples.	Class interaction with the teacher, understanding and recapping the contents of naming some of the rocks examples.	Small white board Rocks examples	
10 minutes	Setting the entrance activity. TIM & Moby flash animation about physical and chemical weathering.	Pupils will be watching the flash animation and write the question and answer for What is physical or mechanical weathering?	TIM & MOBY flash animation Computer Speakers	
5 minutes	<b>Activity 1</b> Going through PowerPoint with the pupils about physical weathering	-Pupils will be listening -Pupils will also be writing key information about the topic	white board Exercise books Computer Power point	Q+A
20 minutes	<b>Activity 2</b> Practical about heating and cooling,,,	-Pupils will pay attention to teacher demonstration about physical weathering. Some rocks examples (sandstone, limestone and marble) will be heated and put in cold water. Pupils will draw a table and record the results and write the conclusion.	white board Exercise books Line paper Computer  <b>Note: See risk assessment attached</b>	Assessing pupils' behaviour and effort by participating into practical activity and also assessing pupil's practical skills.

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	<b>Setting and giving instructions for the plenary activity.</b>	Pupils will need to choose the correct answer by using their fingers. Small quiz with multiple choice answers.	Computer Power point	Assessment by checking who knows and who struggle the correct answers.
3 minutes	Packing away and get ready for next lesson.	Pupils need to start packing and cleaning lab to move to next lesson.	-	-

PGCE & BSc. Secondary Science(School based Form)

Risk Assessment

**Title of Practical Activity:** Physical weathering

**Teachers and pupils involved:** teacher, trainee teacher and 33 pupils

<b>Substances hazardous to health - Chemicals regulated by COSHH</b>	
1. Getting burn with Bunsen Burner	6.
2. Using a tong	7.
3.	8.
4.	9
5.	10.

**Hazardous procedure or item of equipment.**

**Items:** rocks examples (limestone and marble), Bunsen burner, a splint, cold water, a beaker and a tong.

**Risk estimator >10 then risk is unacceptable; rethink control measures)**

<b>Likelihood of occurrence</b>	<b>L Score</b>	<b>Severity of Outcome</b>	<b>O Score</b>
Highly unlikely	1	Slight inconvenience	1
May happen but rare	2	Minor injury	2
Does happen but rare	3	Medical attention required	3
Occurs time to time	4	Major injury leading to hospitalisation	4
Likely to occur often	5	Fatality or serious injury	5

**Practical Risks**

<b>Hazard</b>	<b>L Score</b>	<b>O Score</b>	<b>Total (Lx O)</b>	<b>Control Measures</b>
1	3	3	9	Teachers will aware pupils of practical risk assessment/health & safety.
2	2	3	6	

## Lesson Evaluation

Lesson Rating – My Performance *(To be completed at the end of every lesson)*

<b>Criteria</b>	<b>Very Good</b>	<b>Good</b>	<b>Satisfactory</b>	<b>Unsatisfactory</b>
Knowledge				
Resources				
Lesson Objectives				
Behaviour Management				
Risk Assessment				
Differentiation				
Feedback to pupils				
Assessment				
Variety & Pace				
Level appropriate				
Visuals – high quality?				

General Comments (Improvements for your teaching and/or pupil learning)

Were your Outcomes Achieved? (Include details of Evidence)

Teachers Lesson Rating – *(To be completed at the end of every lesson)*

<b>Criteria</b>	<b>Very Good</b>	<b>Good</b>	<b>Satisfactory</b>	<b>Unsatisfactory</b>
Knowledge				
Resources				
Lesson Objectives				
Behaviour Management				
Risk Assessment				
Differentiation				
Feedback to pupils				
Assessment				
Variety & Pace				
Level appropriate				
Visuals – high quality?				

Teacher Comments