Researchers in Schools

Could we predict a volcanic eruption?

Key Stage 4 Programme

Pupil Name

Coursebook Designed by **Dr. Jose Fonseca**

Timetable and Assignment Submission

Timetable – Tutorials

Tutorial	Date	Time	Location
1	2nd of December	12pm	University of London
2	15th of January	3:30pm	Library
3	22th of January	3:30pm	Library
4	29th of January	3:30pm	Library
5	5th of February	3:30pm	Library
6 (Feedback)	26th of February	3:30pm	Library
7 (Feedback)	11th of March	3:30pm	Library

Timetable – Homework Assignments

Homework Assignment	Description	Due Date
Tutorial 1	Baseline Assignment	15th of January
Tutorial 2	Do you like crystals?	22th of January
Tutorial 3	Diffusion in daily life	29th of January
Tutorial 4	In your words!	5th of February
Tutorial 5	Final Assignment	5th of March

Assignment Submission – Lateness and Plagiarism

Lateness	
Submission after midnight on 9th August	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

Contents

Course Rationale **Page 4**

Mark Scheme **Page 5**

Glossary of Keywords **Page 10**

Tutorial 1

Activity 1 **Page 13**

Activity 2 **Page 15**

Baseline Assignment **Page 15**

Tutorial 2

Activity 1 **Page 16**

Activity 2 **Page 17**

Activity 3 **Page 17**

Activity 4 **Page 17**

Homework **Page 18**

Tutorial 3

Activity 1 **Page 19**

Activity 2 **Page 20**

Activity 3 **Page 20**

Homework **Page 20**

Tutorial 4

Activity 1 **Page 21**

Activity 2 **Page 21**

Activity 3 **Page 22**

Activity 4 **Page 22**

Homework **Page 22**

Tutorial 5

Activity 1 **Page 23**

Activity 2 **Page 24**

Activity 3 **Page 24**

Final Assignment **Page 26**

Tutorial 6

Reflection on feedback **Page 27**

Tutorial 7

Reflecting on the course **Page 29**

Appendices

Referencing correctly **Page 31**

Notes **Page 33**

Course Rationale

In a world full of volcanoes, we need more volcanologists! Some cultures see volcanoes has Gods and that is because they are huge and capable of destroying everything around them! But they are as well one of the most fascinating demonstrations that our planet is still "alive"! If you are reading this it means you have great potential to become a volcanologist!

Do you know why people choose to live nearby a volcano? What are they risking their lives for? What can we do to help preventing a catastrophe caused due to a volcanic eruption? All these questions and much more will be discussed during the course and we will work together to give them answers.

Prepare to discover what happens inside a volcanic system. You will be able to better understand how to monitor the volcanic activity because you will know everything about the volcanic mechanisms! You will investigate about the chemical composition of volcanic minerals to learn about the story of a volcano. And prepare to use computer-based numerical models to estimate the temperatures and the duration of the processes occurring inside the volcanic system!

By the end of the course, you will be more aware of the hazard a volcanic system represents and you will be able to explain to your family, friends and teachers how to study a volcano, demonstrating furthermore the importance of the work and research of a volcanologist!

Uni Pathways Mark Scheme 2019 – Essay-based assignments

	Skills	1st (70-100)	2:1 (60-69)	2:2 (50-59)	3rd (40-49)	Mark /100
Subject knowledge	Knowledge and understanding	o All content included and materials used are relevant to the general topic and to the specific question/title o Good understanding of all the relevant topics. o Technical terms are defined and used accurately throughout o Clear justification of how the material and content included is related to the specific issues that are the focus of the assignment	o Most of the materials used and content included are relevant to the general topic and to the specific question/title o Good understanding of most the relevant topics o Technical terms are mostly defined and used accurately o Adequate justification of how the material used and content included are related to the specific issues that are the focus of the essay	o Some of the materials used and content included are relevant to the general topic and to the specific question/title o Good understanding on some of the relevant topics but occasional confusion on others o Technical terms are sometimes used and defined accurately o Some justification of how the material used and content included are related to the specific issues that are the focus of the essay	o The content included and materials used are not applied to the question/title in a relevant manner o There is confusion in how understanding of the topics is expressed	
Critical thinking	Research and evidence	o Includes rich sources of research findings, data, quotations or other sourced material as evidence for the claims/ideas o Uses evidence/calculations to support claims/assertions/ideas, consistently clearly and convincingly o Evidence of further reading beyond materials provided which were used in an appropriate context o Data is effectively analysed and appropriate assumptions/conclusions are reached	o Includes adequate sources of research findings, data, quotations or other sourced material as evidence for the claims/ideas o Uses evidence/calculations to support claims/assertions/ideas, mostly clearly and convincingly o Evidence of further reading beyond materials provided o Data is analysed and the assumptions/conclusions that are reached are mostly appropriate	o Includes some sources of research findings, data, quotations or other sourced material as evidence for the claims/ ideas o Uses evidence/calculations to support claims/assertions/ideas, at times clearly and convincingly o Limited evidence of further reading beyond materials provided o There is an attempt to analyse data is and draw assumptions/conclusions	o Inclusion sources and materials is very limited and mostly not attributed o Applicable sources are rarely used to support ideas. o Data is not used or few appropriate conclusions are drawn from it.	
	Developing an argument	o A point of view or position in relation to the title or question is consistently clear. The position is developed effectively and consistently throughout the essay o Argument is exceptionally well-developed and well-justified o Makes links effectively between subjects that have not previously been associated o Uses concepts from the tutorials in an unfamiliar context and does so accurately and confidently. o Content is analysed effectively to support the argument	o A point of view or position in relation to the title or question is adequately clear. The position is well-developed in most of the essay o Argument is clear and well-developed, and position is justified o Some evidence of linking subjects that have not previously been associated o Uses some concepts from the tutorials in an unfamiliar context, but not always accurately o Analyses content to support the argument	o A point of view or position in relation to the title or question is somewhat clear. The position is well-developed in parts of the essay o Argument is clear but not well-developed o Limited evidence of linking subjects that have not previously been associated o Limited use of concepts from the tutorials in other contexts o Uses some analysis of content to support the argument	o There is not a clear point of view or position taken and sometimes the argument is not clearly established	

	Critical evaluation	○ Moves beyond description to an assessment of the value or significance of what is described ○ Evaluative points are consistently explicit/systematic/reasoned/justified ○ Effectively critiques the reliability of sources provided	○ Mostly description but some assessment of the value or significance of what is described ○ Evaluative points are mostly explicit/systematic/reasoned/justified ○ Some evidence of critiques on the reliability of sources provided	○ Describes with minimal assessment of the value or significance of what is described ○ Evaluative points are at times explicit/systematic/reasoned/justified ○ Limited evidence of critiques on the reliability of sources provided	○ The work is descriptive in nature and there is a lack of critical engagement in the value of sources	
Written communication	Structure and presentation	○ Ideas are presented in paragraphs and arranged in a logical structure that is appropriate for the assignment ○ The introduction clearly outlines how the essay/report will deal with the issues ○ The conclusion summarises all the main points clearly and concisely ○ All calculations, formulas and methods are clearly structured, clear to follow and correct ○ Tables and graphs are effectively constructed including appropriate headings, units and scales. ○ All sources are referenced correctly in an agreed format	○ Ideas are presented in paragraphs and arranged in a structure that is mostly appropriate for the assignment ○ The introduction adequately describes how the essay/report will deal with the issues ○ The conclusion summarises most of the main points clearly ○ Calculations, formulas and methods are mostly structured, clear to follow and correct ○ Most tables and graphs are well constructed ○ Most sources are referenced correctly in an agreed format	○ Ideas are presented in paragraphs and arranged in a structure ○ The introduction mentions how the essay/report will deal with the issues ○ The conclusion summarises some of the main points clearly ○ Calculations, formulas and methods are not always structured, clear to follow and correct. ○ Some tables and graphs are well constructed but contains some errors ○ Some sources are referenced correctly in the agreed format with occasional errors	○ Ideas are presented in paragraphs but there is a lack of structure in how the work is presented ○ The work lacks an introduction that establishes the scope of the question ○ The work lacks a conclusion that summarise the main points raised ○ Work is not referenced accurately	
	Language and style	○ No spelling, grammar or punctuation errors ○ Writing style consistently clear, tone appropriate and easy to follow ○ Accurate and consistent use of technical language and vocabulary	○ Minimal spelling, grammar or punctuation errors ○ Writing style mostly clear, tone appropriate and easy to follow ○ Some attempts of using technical language and vocab alary, but not always accurate	○ Some spelling, grammar or punctuation errors ○ Writing style moderately clear, tone appropriate and easy to follow ○ Use of simple language and vocabulary effectively but struggles to use technical language	○ There are a significant number of spelling, grammar and punctuation errors ○ Use of simple language and vocabulary effectively but a lack of technical language	
Overall Mark (average of the 6 marks from the criteria above)						

Baseline Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	
Name of RIS teacher	
Title of Assignment	

How your assignment is graded:

Grade	Marks	What this means
1st	70+	Performing to an excellent standard at A-level
2:1	60-69	Performing to a good standard at A-level
2:2	50-59	Performing to an excellent standard at GCSE
3rd	40-49	Performing to a good standard at GCSE
Working towards a pass	0-39	Performing below a good standard at GCSE
Did not submit	DNS	No assignment received by The Brilliant Club

Lateness	
Any lateness	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should give an explanation in this section:

Mark Breakdown and Feedback

Knowledge and Understanding		Research and Evidence	
	mark		*mark*
Developing an Argument		**Critical Evaluation**	
	mark		*mark*
Structure and Presentation		**Language and Style**	
	mark		*mark*

Final Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	
Name of RIS teacher	
Title of Assignment	

How your assignment is graded:

Grade	Marks	What this means
1st	70+	Performing to an excellent standard at A-level
2:1	60-69	Performing to a good standard at A-level
2:2	50-59	Performing to an excellent standard at GCSE
3rd	40-49	Performing to a good standard at GCSE
Working towards a pass	0-39	Performing below a good standard at GCSE
Did not submit	DNS	No assignment received by The Brilliant Club

Lateness	
Any lateness	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should give an explanation in this section:

Mark Breakdown and Feedback

Knowledge and Understanding		Research and Evidence	
	mark		*mark*
Developing an Argument		**Critical Evaluation**	
	mark		*mark*
Structure and Presentation		**Language and Style**	
	mark		*mark*

Subject Vocabulary

Word	Definition	In a sentence	In your words
Lava	Molten rock, including melt and crystals. This material is found both within the erupting vent and flowing on of the volcano.	During an eruption, lava flows at variable velocities, depending on its composition, temperature and on the landscape.	
Magma	Molten rock, including melt, crystals and gas. This material is found within the closed volcanic plumbing system.	200-400km below the Hawaiian Islands, Earth's mantle rocks melt to form the magma that feeds this magmatic plumbing system.	
Crystal	Solid material formed by lattice of atoms, molecules and ions arranged periodically in three dimensions.	Crystals of olivine, pyroxene and plagioclase are usually found together Hawaiian lavas.	
Diffusion	ocess where a particle (atom or ion) moves through a material (liquid, solid or gas) from one region to another, driven by different concentrations.	As diffusion occurs and the atoms of Mg move from the olivine crystal to the surrounding magma, the composition of the crystal changes.	
Geospeedometry	Technique used to model the timescales of magmatic processes occurring before an eruption.	We used Geospeedometry technique to estimate how long it took for the magma to mix in the main magmatic chamber before the eruption.	
Volcanic system	Refers to the complete volcanic structure and surrounding area	The study of the volcanic system includes the central and lateral vents,	

	wherein volcanic activity occurs. It includes the deep magmatic conduits connected to the main volcanic vent.	and also the fumaroles around the volcano.	
Magmatic plumbing system	Refers to the complete system of magmatic conduits below the volcano, responsible for transporting the magma from its origins until the surface. It includes all the magmatic conduits and the magmatic chambers.	The magmatic plumbing system feeding the Hawaiian Islands goes from the surface until circa 400 km below, where the magma forms.	
Magmatic chamber	Underground pool of magma below the volcano where variable amounts of magma are preserved.	Most of the times, an eruption occurs as a consequence of a new recharge of magma entering the main magmatic chamber.	
Mineral	Solid with a specific chemical composition that occurs naturally with a crystalline structure.	$(Mg,Fe)_2SiO_4$ is the chemical composition of the mineral called olivine. We can find several crystals of olivine in the Hawaiian lavas.	
Magma mixing	Event when different magmas mix within the magmatic plumbing system.	When a magma ascends within the magmatic conduits, it usually finds an existing magma chamber and mixes with the magma residing therein.	
Magmatic conduits	These are the pipes underneath the volcano that allow the magma to move from one place to another.	Magma fractures the surrounding rocks to break through and ascend, creating new magmatic conduits.	

Seismicity	Measure of how frequent and string earthquakes are in a region.	The seismicity of a volcanic field increases when the magmatic chamber is recharged.	

Tutorial 1 – Would you visit/live close to a volcano?

What is the Purpose of Tutorial 1?

- Explain the benefits and risks of living nearby a volcanic system;
- Give examples of techniques to monitor volcanic activity;
- Explain the importance of predicting volcanic eruptions.

Activity 1: Think-pair-share

Do you know what takes people to live close to a volcano? Reflect about pros and cons and write down three examples of each.

Figure 1 – Four pictures illustrating different activities related to volcanic areas.

Activity 2: After doing the case studies

Write about two techniques to monitor the activity of a volcano and describe how the help. Also explain, in your opinion, why is It important to try to predict a volcanic eruptions.

Baseline Assignment

Baseline assignment instructions:

Write an essay (500 words) about the importance of monitoring the volcanic activity and how to monitor the volcanic activity. You have to:

- Explain why people choose to live nearby a volcano and name the most important techniques used to monitor volcanic systems;
- Name and explain two monitoring techniques, presenting the benefits and limitations of each chosen technique.

Write Baseline assignment success criteria:

- Include relevant content, following the examples approached in the tutorial 1;
- Search and find information sources yourself;
- Give reasons and evidences to back up the points. Consider using the PEE structure (point, evidence, explanation);

Tutorial 2 – So, HOW and WHERE does it all start?

What is the Purpose of Tutorial 2?

- Explain what a volcanic system is and identify its main compounds;
- Describe how the magma forms and finds its way into the surface;
- Name the compounds of the magma.

Activity 1: **In pairs**, discuss and draw what you think a volcanic system looks like. Include the volcano and what is below the volcano. Use the **left box** bellow.

Activity 2: **In groups**, use the given items to build a volcanic system.

Activity 3: **Individual work**
Great! Now you now with more detail how a volcanic system looks like! Draw a new version of a volcanic system. Use the box on the right on page 14.

Activity 4: Complete the text bellow

When rocks in the earth's mantle and crust melt, they form _____. Because magma is _____ dense then the rocks around it, it escapes by fracturing the rocks above. It is like olive oil and water: the _____ will always be on top of _____ because it is less dense.

Every rock is an aggregate of_____. Crystals may have different sizes and compositions. When a rock is molten, most of the crystals melt. It is like melting sugar to form caramel. When magma travels upward and reaches a shallower depth, small _____ start to form. We say that magma is a mixture of liquid rock, _____ and _____.

Magma travels through the crust and sometimes forms _____ chambers. These are like meeting points for magmas coming from different paths. There are usually different

magmatic chambers in the _____ plumbing system. When a magma chamber is full, _____travels upwards and may even _____. Once it reaches the surface by coming out of the _____, we don't call it magma anymore. We call it _____. The difference is that magma has gas _____ in it, whereas lava _____all the gas into the atmosphere. It is like a bottle of sparkling water. Once we open it, the gas dissolved in the water escapes into the atmosphere.

Homework: Do you like crystals?

Find 4 of the most common minerals found in volcanic rocks. Use the table below to write the name of the mineral, its chemical composition and an application in industry.

Homework success criteria:

- Find information in books (e.g. school library) or internet (e.g. Wikipedia).
- Write the references where you took the information from bellow the table.

Name of mineral	Chemical composition	Application in industry
Olivine	$(Mg,Fe)_2SiO_4$	e.g. Gems for jewellery; capturing CO_2.

Tutorial 3 – How we map a magmatic system?

What is the Purpose of Tutorial 3?

- Recognise the main variables of a magmatic system;
- Use simple calculations to model temperature and pressure in magmatic systems;
- Use the results of the models to estimate the spatial distribution of the magmatic plumbing system.

Before starting: when preparing an experiment, we need to know exactly what we are testing and all the variables. Show that you know how to recognise the different variables by matching the following with the correct definition.

Independent Variable	**The variable that is affected by the experiment;**
Dependent variable	**The variable/variables that are fixed during the experiment;**
Control variable	**The variable that we vary during the experiment to see its influence on the results.**

Activity 1: **Video Observation** about the role of temperature in the crystallization within a plumbing system. Use your own words to describe what happened in the video. (10 minutes).
Start by saying what the objective of the experiment is and list the independent, dependent and control variables of the experiment. Then describe the results of the experiment

Activity 2: **In pairs**, complete the text bellow using the following words:

Magmatic chamber; **crystals**; **magma**; **depth**; **temperature**; **pressure**

Magmatic plumbing systems can extend through dozens of kilometres below the volcanic system. We know that _____ grow from the magma that resides inside a _____.

If we know the chemical composition of the _____ and the _____ we can estimate the _____ and _____ at which it crystallised. If we know at which conditions the different crystals grew, we can estimate what the magmatic plumbing system looks like. Remember that if we can transform pressure in _____ and so we know how deep the magmatic system is.

Activity 3: Now that you why we need to calculate temperature and pressure using crystals, **let's practice**!

Homework

Find 3 examples of diffusion that are part of our daily routine. For each example, write a text explaining what it is and what happens. Illustrate your examples with images or drawings.

Homework success criteria:

- Use the concept of high and low concentration to explain diffusion in your examples.
- If you search for examples, write the reference where you took the example from.

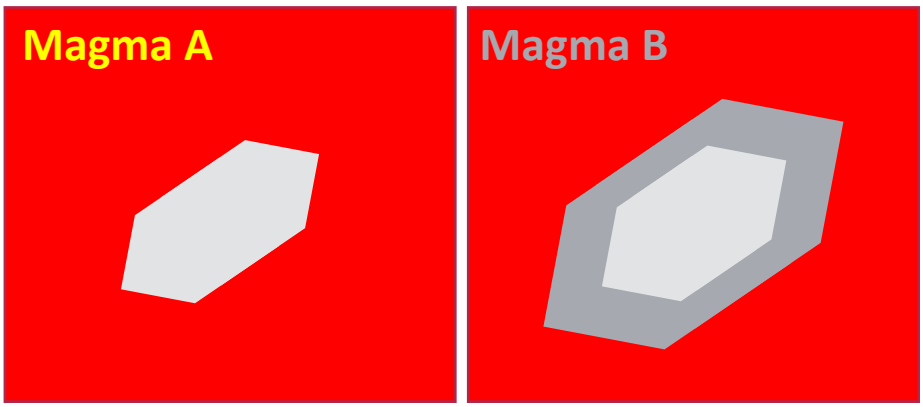
Tutorial 4 – Tic Tac! How long does it take to erupt?

What is the Purpose of Tutorial 4?

- Explain the concept of diffusion and the implications for the study of the magmatic plumbing systems;
- Apply the diffusion model to estimate the duration of a mixing event.

Activity 1: Video observation/experiment about diffusion in liquids and solids. Use the space bellow to take notes.

Activity 2: Show that you learned how diffusion works in crystals!
The crystal in the picture was transported from magma A to magma B. What happens if the crystal remains the magma b for 1) a long time; 2) a short time?



Activity 3: Now that you know why diffusion in crystals is so useful, let's practice!!!!!!!

Activity 4: Think-pair-share

What did you find out with the models? Write down your discoveries and then discuss with your pair.

Homework

Now that you learned the most important concepts, describe each concept in glossary "in your words". Use the rightmost column of the glossary.

Homework success criteria:

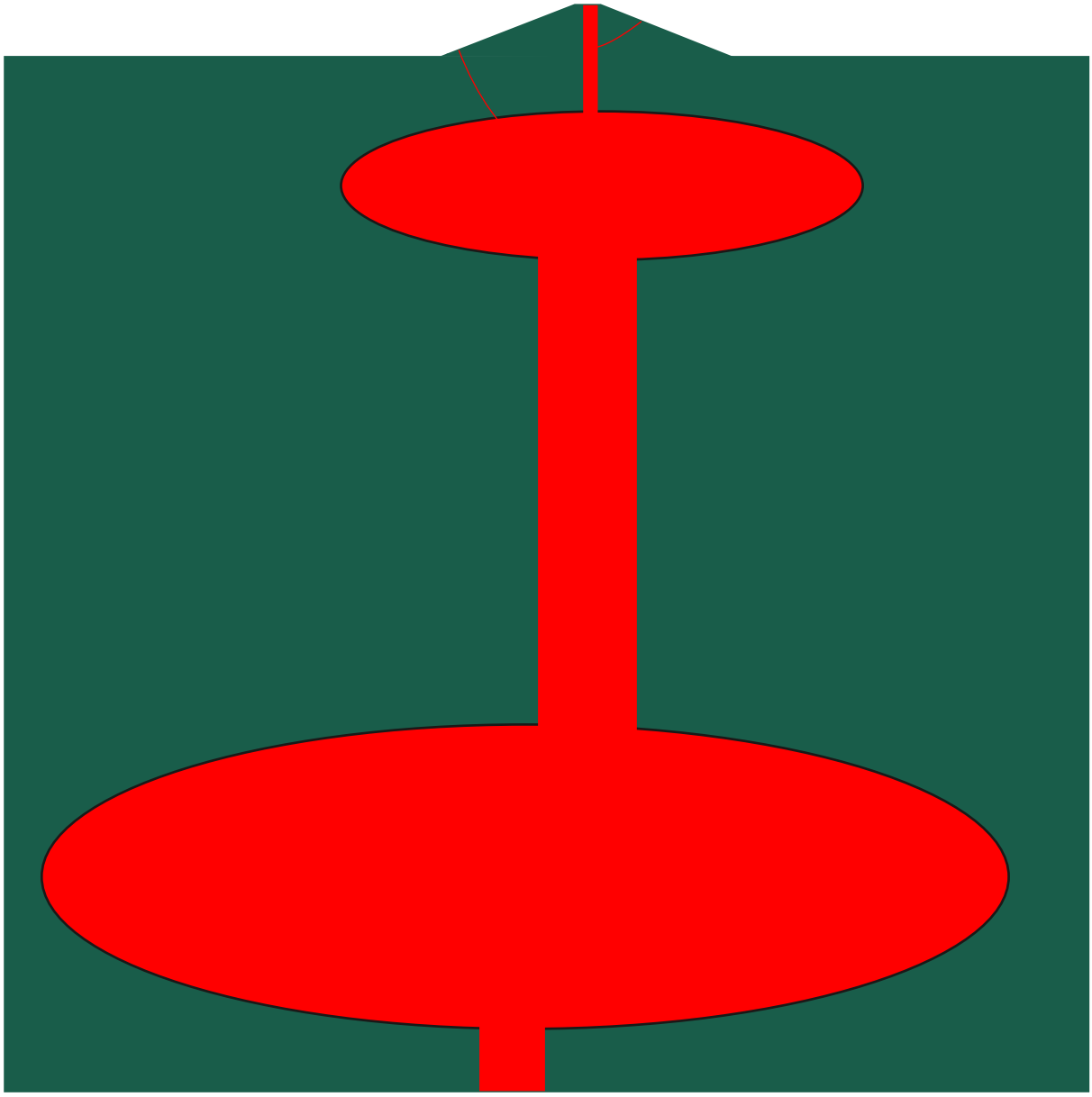
Use your own words, including the scientific language you learnt.

Tutorial 5 – Let's put the pieces together!

What is the Purpose of Tutorial 5?

- Contrast the direct and indirect methods for monitoring volcanic activity;
- Discuss how to plan a volcanic hazard assessment.

Activity 1: The image below is a scheme of a magmatic pluming system. **In pairs**, discuss in which magmatic chamber each group of crystals should be. Then cut and paste the crystals according to your conclusions.



Activity 2: Write here any important and interesting notes about the different techniques we can use to study a volcano. It is important to remember what the technique is used for.

Activity 3: Let's organize our ideas! Now you have learnt about a set of techniques that allow you to study the characteristics of a volcano, let's do a complete example! **In groups**, plan how you would do your research. Show your new skill in volcanology by solving the case as you planned.

"An eruption occurred in the Volcano Etna and we don't know much about it. We know that the chemical composition of the lava is basaltic. We know as well that we have registered seismic activity in two different periods. We would like to know more about the magmatic plumbing system."

Plan your work. What do you want to know? How can you do it?

What you need to know?	How will you do it?
I want to know which minerals I can study	
I want to know about temperature and pressure of the magmatic chambers	
I want to know how long it took from the recharge of the magmatic chamber until the eruption	

Final Assignment

Final assignment instructions:

Write an essay (approximately 2000 words) explaining what you know about volcanic systems and how they work. Include:

- explaining why is it important to monitor the activity of a volcanic eruption;
- listing, describing and illustrating the most important compounds of a volcanic system, including images and diagrams as those in the workbook;
- Naming at least two techniques to monitor the volcanic activity and explain to which compound of the volcanic system they are mostly related to.

Final assignment success criteria:

- Structure the essay by introducing the problem, describing the chosen techniques and summarizing all the key points at the end;
- Include relevant content, presenting the concepts clearly;
- Include research findings from a wide range of sources (see below examples);
- Give reasons and evidences to back up the points (consider using the PEE structure).

Useful resources:

- Workbook;
- Wikipedia;
- Youtube (e.g. Volcano Hell – BBC science; Dr. Binocs Show).

Tutorial 6 – Feedback tutorial

What is the Purpose of Tutorial 6?

- To receive feedback on your final assignment
- To respond to the feedback from your Uni Pathways teacher
- To write targets for improvement on your final assignment

Final assignment feedback from your Uni Pathways Teacher

(Remember to look at the mark scheme to help you understand what you have done well so far, and how you can do even better in your final assignment)

Here are three things that my Uni Pathways Teacher thought I did well in my draft assignment
•   •   •

Here are three things that my Uni Pathways Teacher thinks that I could do to get a higher mark in my final assignment
•   •   •

Tasks from my Uni Pathways Teacher to do during the feedback tutorial to help me improve
•   •   •
My response:

Actions I will take to improve my final assignment after this tutorial…
•   •   •

Hand in date for my final assignment:	

Tutorial 7 – Final tutorial

What is the Purpose of Tutorial 7?

- To receive feedback and a grade on your final assignment.
- To reflect on the programme including what you enjoyed and what was challenging.
- To ask any questions you may have about university.

Final assignment feedback from my Uni Pathways Teacher

Final mark:	University style grade:
Feedback: Here are three things that my Uni Pathways teacher thought I did well in my final assignment • • •	

Here are three things that my Uni Pathways teacher thinks I should remember for when I am doing this kind of study in the future
• • •

University

What questions do you still have about University after taking part in Uni Pathways?
•   •   •

Reflecting on Uni Pathways

What did you most enjoy about Uni Pathways?
•   •   •

What did you find challenging about the programme?	How did you overcome these challenges?
• • •	• • •

Appendix 1 – Referencing correctly

When you get to university, you will need to include references in the assignments that you write, so we would like you to start getting into the habit of referencing in your Brilliant Club assignment. This is really important, because it will help you to avoid plagiarism. Plagiarism is when you take someone else's work or ideas and pass them off as your own. Whether plagiarism is deliberate or accidental, the consequences can be severe. In order to avoid losing marks in your final assignment, or even failing, you must be careful to reference your sources correctly.

What is a reference?

A reference is just a note in your assignment which says if you have referred to or been influenced by another source such as book, website or article. For example, if you use the internet to research a particular subject, and you want to include a specific piece of information from this website, you will need to reference it.

Why should I reference?

Referencing is important in your work for the following reasons:

- It gives credit to the authors of any sources you have referred to or been influenced by.
- It supports the arguments you make in your assignments.
- It demonstrates the variety of sources you have used.
- It helps to prevent you losing marks, or failing, due to plagiarism.

When should I use a reference?

You should use a reference when you:

- Quote directly from another source.
- Summarise or rephrase another piece of work.
- Include a specific statistic or fact from a source.

How do I reference?

There are a number of different ways of referencing, and these often vary depending on what subject you are studying. The most important to thing is to be consistent. This means that you need to stick to the same system throughout your whole assignment. Here is a basic system of referencing that you can use, which consists of the following two parts:

1. **A marker in your assignment**: After you have used a reference in your assignment (you have read something and included it in your work as a quote, or re-written it your own words) you should mark this is in your text with a number, e.g. [1]. The next time you use a reference you should use the next number, e.g. [2].
2. **Bibliography**: This is just a list of the references you have used in your assignment. In the bibliography, you list your references by the numbers you have used, and include as much information as you have about the reference. The list below gives what should be included for different sources.

    a. **Websites** – Author (if possible), title of the web page, website address, [date you accessed it, in square brackets].

    E.g. Dan Snow, 'How did so many soldiers survive the trenches?', http://www.bbc.co.uk/guides/z3kgjxs#zg2dtfr [11 July 2014].

    b. **Books** – Author, date published, title of book (in italics), pages where the information came from.

    E.g. S. Dubner and S. Levitt, (2006) *Freakonomics*, 7-9.

    c. **Articles** – Author, 'title of the article' (with quotation marks), *where the article comes from* (newspaper, journal etc.), date of the article.

    E.g. Maev Kennedy, 'The lights to go out across the UK to mark First World War's centenary', Guardian, 10 July 2014.

Notes

Notes

Notes

UNI PATHWAYS

UNI PATHWAYS

researchersinschools.org