# Lesson Plan Sequence PE3

- **(1) Tectonics**, **(2) Earth** **(3) Volcanoes**

<table>
<thead>
<tr>
<th>Resources</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>- (1) Students pair.</td>
<td>- (1) 45 Minutes Total</td>
</tr>
<tr>
<td>- Teacher’s tool Box.</td>
<td>- 5 minutes - Teacher’s Toolbox.</td>
</tr>
<tr>
<td>- Plate for tool box.</td>
<td>- 10 minutes - reading out the information about tectonics on the power point presentation.</td>
</tr>
<tr>
<td>- You Tube video.</td>
<td>- 20 minutes activity jig saw puzzle of the world.</td>
</tr>
<tr>
<td>- Power Point presentation.</td>
<td>- 10 minutes – to discuss what the earth was like 220 million years ago when all of the continents were joined.</td>
</tr>
<tr>
<td>- Pencil or pen.</td>
<td>- (2) 45 minutes Total</td>
</tr>
<tr>
<td>- Scissors</td>
<td>- 5 minutes – Teachers Tool Box</td>
</tr>
<tr>
<td>- Glue.</td>
<td>- 3 minutes – You Tube clip</td>
</tr>
<tr>
<td>- Circle page.</td>
<td>- 7 minutes – finding added squirrel earth cores.</td>
</tr>
<tr>
<td>- Puzzle page.</td>
<td>- 10 minutes to write list of things seen and not seen.</td>
</tr>
<tr>
<td>- Answer sheet.</td>
<td>- 15 minutes to discuss findings.</td>
</tr>
<tr>
<td>- (2) Teacher’s tool Box</td>
<td>- 3 minutes to cover any questions.</td>
</tr>
<tr>
<td>- Pen, pencil.</td>
<td>- (3) 45 minutes total.</td>
</tr>
<tr>
<td>- Paper A4.</td>
<td>- 5 Minutes - Teacher’s Tool Box</td>
</tr>
<tr>
<td>- You Tube clip.</td>
<td>- 3 minutes – introduction to definition of a volcano.</td>
</tr>
<tr>
<td>- Power Point presentation.</td>
<td>- 3 minutes – You Tube video</td>
</tr>
<tr>
<td>- Chairs in a circle.</td>
<td></td>
</tr>
</tbody>
</table>
### how to build a working volcano

- Four rectangular containers
- For moderately sized jam jars
- Top soil from work for around the jars
- Smocks if possible for students
- Half cup for water per group
- Water
- Half a cup of baking soda per group
- Four table spoons (one each group)
- Bottle of dishwashing liquid
- Food colouring
- Vinegar
- Confetti if possible or shredded paper.

### 3 minutes different types of volcanoes

- 3 minutes You Tube clip “How to Make a Volcano.”

### 20 minutes – create Volcano

- 8 minutes - to ask questions and to clean up.

---

### Student Special Considerations

- **(1)** Make sure the technological side of the activity is well managed.
- Make sure that the time limit is adhered to.
- Make sure not too much elaboration is given to talks in the last 10 minutes because this will be used as an introduction to another lesson.
- Make sure noise level is not too high and that teacher can intervene when necessity arises.
- When allocating groups into pairs count to two and do not get students to hand out numbers save time.
- Be mindful that one of the students has a fractured are and that the activities are not too strenuous.
• Be mindful that one of the students has a hearing impairment and that an external device is sometimes required.

• (2) Make sure students have and know allocated jobs.

• Make sure students have the correct resources to do the activities.

• Make sure students work consistently as a pair and share responsibility.

• Make sure students know exactly what to do why the activity is being done.

• Students should know that portions of the activity will be done in the seat and others will be completed out.

• Be aware that I am teaching Year Five and Six and will be differences in ability (socially, cognitively and physically). So be mindful of tasks and activities and ask are they suitable?

• Teacher needs to be aware that there are three sections to this second sequence and that students should all completely finish one activity before the next is instigated by the teacher.

• (3) First student priority is safety. Review the list of ingredients with colleague teacher.

• If available have protective wear such as smocks to safeguard against splatter of materials.

• Eye safety glasses maybe unavailable.

• Make sure students doing the volcano activity know what to do.

• Give directions of use of material and advise on any hazards that they may have.

• Make sure students are physically able to perform task (fractured arm).

• Give students enough room between groups so they are not inhibiting each other’s space. This will create a fair and reliable experiment for later hypothesis.

• Make sure area is cleaned up and any spillage of material such as water is cleaned up immediately for safety, (spot the hazard).

Outcomes

• (1) (Students learn that at one point in our history the earth’s continents were joined.)

• Students learn the enormity of our oceans and appreciate their restrictive properties.

• Students learn to use their pre-determined ideas in placing countries of our world in their
respective zones.

- Students learn to focus their attention on closed questions, and learns to use these questions as vehicles to transport them to a final answer.
- Students will learn to work co-operatively in pairs and know how to utilise the advantages that think, pair, sharing can provide.
- Students will learn to stop, look, listen and think about instructions that are provided by the teacher.
- Students will learn to reflect and delve into their imagination to explore how the earth once looked 220 million years ago.
- By visiting the web site Plates on the Move students will learn more about the museum and extend their knowledge by learning how tectonics impacts upon our earth through the formation of mountains, oceans and continents.
- (2) Students will be aware that the Earth’s core is made up of different stages.
- Students will realise the enormity of the Earth’s core, particularly by comparing it to distances over land mass.
- Students will become aware of Equatorial (horizontal) and Polar (vertical) distances.
- Students will learn to visualise thing within our world that they can and cannot see and be conscious of their existence.
- Students will learn to work in pairs, share ideas and listen to their peer for good ideas and solid reasoning.
- Students will realise that within a circle of learning each student has equal voice and that there are no wrong answers.
- Students will learn that their line of reasoning is and can be subject to change over time.
- Students will learn that the information they receive from peers can be subtly reasoned.
- Students will learn to follow written and verbal instructions.
- (3) Students will be able to build on their knowledge and learn to apply more meaningful closed questions to achieve quicker answers through the Teacher’s Tool Box.
- Students will learn about the destructive forces of volcanoes and simultaneously realise that some good things are derived from bad situations (soil fertilisation).
• Students will learn how to follow directions and add ingredients to produce a reaction and result.

• Students will learn the true nature of a fair and reliable experiment.

• Students will learn that tea work is essential in any well-orchestrated activity.

• Students will realise that safety is an important factor when undertaking any lesson that involves ingredients mixed together.

• Students will discover the necessity to clean up after themselves, especially hazards that may lurk around, particularly on the floor.

• Students will know how to ask specific and related questions regarding what they have just seen, done and achieved.

• Students should feel proud that they have achieved and succeeded in their endeavours to create a working down-scaled volcano.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Behaviours</th>
</tr>
</thead>
</table>
| • (1) For this first part of the sequence I have decided to implement a Formative Assessment criteria. The main purpose behind this assessment allows me to inquire and collate information on which to structure my other two parts of my lesson sequence. By this I refer to student involvement, whether this part of the activity is viable and can be continued into sequence two and how well the students learn and retain information, especially in regards to asking the question is some of the information too difficult for some learners. This consideration is important because I am structuring these lesson sequences for Year Five and Six, so I must be conscious... | • (1, 2,3) Make sure students are aware of their own noise level.  
• Students must be mindful that teacher will interrupt lesson to make changes and provide instruction.  
• Students must have a genuine rapport for other students and be genuine when giving out praise at the conclusion of lesson.  
• Students must raise hands and not call out answers.  
• Students must follow instructions, otherwise the activity may not get completed and therefore succeed.  
• Know when work will be done sitting and standing, focus on task and not wander around classroom.  
• Students should be aware of sharing ideas with one another and waiting for their turn... |
that students will have different levels of cognitive ability.

- **(2)** The primary purpose of assessment is to improve learning that is why a **Formative type assessment** suits this second part of the sequence. So by using writing and observation as a learning strategy I can see how the students are using their imagination, thoughts and existing knowledge to write list about what they know and can see and what they now know about what is not visible. This allows me to make qualified assumptions against the weak and strong portions of their knowledge and learning and to make the necessary alterations to the next part of this sequence.

- **(3)** The Volcano experiment will be assessed under the heading of **Diagnostic**. This has been selected due to the need to view the activity as fair, free from bias and inclusive. In addition the work that students have completed will be assessed on both group performance and individual merit. It will be based on allowing the students to continue with the experiment which allows them to reflect and evaluate their own learning. It also permits the teacher to make judgement on student work and learning through applied real time submission.

- **(3)** Students should act in such a way that reflects an understanding and awareness of safety, particularly when using and interrelating different ingredients to acquire a desired result.

- Students should clean up and be prepared to assist others to do so.

- Students should be equally prepared to go out of their way to make sure other students are not interrupted or distracted during the experiment.

- Students should be conscious of other student’s good performance and congratulate them accordingly at the end of the experiment when the teacher asks.
<table>
<thead>
<tr>
<th>Teacher’s Role</th>
<th>Students’ Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>• (1) Makes sure time restraints for each activity are observed.</td>
<td>• (1) Volunteer for Teacher’s Tool box activity.</td>
</tr>
<tr>
<td>• Allocate students to their specific classroom lesson roles.</td>
<td>• Ask closed questions only.</td>
</tr>
<tr>
<td>• Conduct Teacher’s Tool Box activity.</td>
<td>• Student to perform it duties and another to activate lights.</td>
</tr>
<tr>
<td>• Run You Tube video and call on light monitor.</td>
<td>• Get into the groups of two ready for lesson activity.</td>
</tr>
<tr>
<td>• Place students in groups of two by counting.</td>
<td>• Ask questions if necessary about the activity (Jig Saw Puzzle).</td>
</tr>
<tr>
<td>• Get students to think, pair share.</td>
<td>• Learn how to think, share and pair.</td>
</tr>
<tr>
<td>• Explain to students what think, pair, sharing involves.</td>
<td>• Cut out land masses and joint together as a puzzle.</td>
</tr>
<tr>
<td>• Give instructions of Jig Saw Puzzle activity.</td>
<td>• Put names on work done by pairs.</td>
</tr>
<tr>
<td>• Get students to distribute activity sheets 3 per group total.</td>
<td>• Once completed put work to be viewed by teacher on the desk.</td>
</tr>
<tr>
<td>• Get students to put their names on the worksheet</td>
<td>• Be seated ready for final activity of sequence one continental drift 20 million years ago.</td>
</tr>
<tr>
<td>• Make sure all students know what to do with the activity.</td>
<td>• (2) Students to ask closed and open questions about the Teacher’s Tool Box.</td>
</tr>
<tr>
<td>• Once completed hand in work sheet to the desk for viewing by teacher.</td>
<td>• Students to know their roles as monitors.</td>
</tr>
<tr>
<td>• Class discussion of continental drift.</td>
<td>• Students to watch You Tube clip.</td>
</tr>
<tr>
<td>• (2) Organise Teacher’s Tool Box.</td>
<td>• Students to know which other student to think, pair and share with.</td>
</tr>
<tr>
<td>• Organise students into their respective roles.</td>
<td>• Students to draw two columns and follow directions on what they can and cannot see.</td>
</tr>
<tr>
<td></td>
<td>• Students to think, pair and share ideas.</td>
</tr>
<tr>
<td></td>
<td>• Students to share ideas in a learning circle or at desks.</td>
</tr>
</tbody>
</table>
|                                                                                | • Students to ask questions in the remaining
- Explain the various layers of the Earth’s crust
- Run You Tube clip.
- Put students into pairs
- Explain to students the additional layers that the squirrel has.
- Show the students how distance of the Earth’s core corresponds to the distance across the Earth.
- Get students to write their thoughts on paper and to separate them into two columns of what they can and cannot see and what they are aware of now.
- Move students to a circle of learning or leave them at their desk in pairs, whatever is easiest at the time.
- If time permits organise students to ask questions.
- (3) Conduct Teachers Tool Box
- Explain definition of volcanoes
- Run two You Tube videos
- Put students into groups of six by getting them to stand when they are counted.
- Explain instruction of experiment.
- Give each group a set of instructions.
- Explain safety precautions.

minutes if time permits.

- (3) Ask questions regarding Teachers Tool Box.
- Know their respective groups.
- Know what their role in the lessons are.
- Know the process of the experiment that they are about to conduct.
- Make sure that they are aware of the safety process put in place.
- Know the importance of cleaning up and assisting others to clean up after the conclusion of the experiment.
- Know the importance of praising other’s good efforts, behaviour and responsibilities.
- Ask questions and reflect on experiment.
- Leave instructions of recipe and ingredients on the board.
- Get student to ask and answer question on how things would be done differently.
- Make sure students clean up
- Get students to thank and be appreciative of other students.
- Thank students by displaying last image on Power Point Projection.

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
</table>
| • (1) The activity will commence with the Teacher’s Tool Box. Inside will be a plate.  
  • Next students ask closed questions to resolve its contents.  
  • Power point presentation is read.  
  • Student turns out light for You Tube clip.  
  • Students are placed in groups of two for activity by counting.  
  • Think, pair, share is explained.  
  • Students are given instructions on what to do particularly how to cut out countries for their puzzle.  
  • Students put names on work sheet.  
  • Students glue countries to circle.  
  • Consult puzzle answer.  
  • Place finished work on desk for teacher to mark.  
  • 5-10 minute class activity on how the earth was 20 million years ago when the continents were joined. |
- (2) Lesson sequence commences with the Teacher’s Tool Box.
  - Students to ask closed questions to solve what the contents are.
  - Content description is read out.
  - You Tube Clip is run.
  - Students are separated into pairs to think pair share.
  - Sheets are given to students pre-ruled and organised.
  - Students complete sheet.
  - Students prepare for the circle of learning or provide discussion from their desks.
  - If time permits questions can be asked in the remaining 5 minutes.

- (3) Conduct Teachers Tool Box.
  - Give definition of what a volcano is and does regarding its destructive and effective force.
  - Provide information on the different types of volcanoes.
  - Show You Tube video on how to build your own volcano.
  - Leave list of ingredients and recipe on the Smart Board and give each group a copy of the recipe and ingredients.
  - Make sure students are safe.
  - Make sure they answer question on what they would have done differently/ was it a fair and reliable experiment.
  - Make sure they clean up.
  - Get students to congratulate other students.
  - Thank students with last slide on Power Point Presentation.
### Links with ACARA 8.1

- (1, 2,3) ACSHE081 Scientific knowledge is used to solve problems and inform personal and community decisions.
- ACSIS231 With guidance, pose and clarify questions and make predictions about scientific investigations.
- ACSIS086 Identify, plan and apply elements of scientific investigations to answer questions and solve problems using equipment and materials safely.
- ACSIS091 Reflect and suggest suggestions to improve scientific investigation.
- ACSSU095 Change to materials (earth) can be reversible or irreversible.
- ACSHE100 Scientific knowledge is used to solve problems and inform personal and community decisions.
- (2) ACELA1500 Understand that the pronunciation, spelling and meaning of words have histories and change over time.

### Links with AITSL

- (1, 2,3) 1.2 Demonstrate knowledge of understanding of knowledge and understanding of research into how students learn and the implications of teaching.
- 1.5 Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the range of abilities.
- 2.6 Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.
- 3.1 Set learning goals that provide achievable challenges for students of varying abilities and characteristics.
- 3.6 Demonstrate broad knowledge of strategies that can be used to evaluate teaching programs to support student learning.
- 4.2 Demonstrate the capacity to organise classroom activities and provide clear directions.
- 5.2 Demonstrate an understanding of the purpose of providing timely and appropriate feedback about their learning.
- 6.3 Seek and apply constructive feedback for supervisors and teachers to improve teaching practices.
Purpose - What is the focus of the activity?

- (1) To teach students about plate tectonics and that aspects of earth can exist without them being physically seen or felt. It also provides students with a reinforced knowledge of how our planet once looked 220 million years ago against the backdrop of how it is now.

- (2) Learn about the Earth’s core and be able to name and identify differing stages.

- Know and share aspects of the earth’s surface and sub terrain regarding aspects that they can, cannot see and know and did not know existed.

- (3) The purpose of this activity is to assist students in working within an inclusive, cooperative group.

- To have fun and learn through real time hands-on application.

- To know how to safely conduct a scientific experiment.

Resource – What will the pupils need to use?

(1) See above

(2) See Above

(3) See above
In or out of seats, where will the pupils be allowed to work?

(1) Students will be working in pairs both in and out of their seats over the course of the three activities ad within the first part of the lesson sequence.

(2) Students will be working in pairs both in and out of their seats over the course of the activity.

(3) Students will be mainly conducting this experiment out of their seats.

Noise – What is the accepted noise level of the activity?

(1) Group of two activity, as long as I can hear myself think and regain control at the raise of a hand.

(2) Group of two activity, as long as I can hear myself think and regain control at the raise of a hand.

(3) Groups of four and five will be working together. There will be noise and it is accepted as long as students are aware they must be silent when teacher requires.

Time – How long should the activity take?

(1) Try to remain in the timeframe of 45 minutes.

(2) Try to remain in the timeframe of 45 minutes.

(3) Try to remain in the timeframe of 45 minutes.

Cornerstone: Does the lesson Engage, develop, innovate and express desire to learn?

• (1) Explain difference/// Continents are large land masses that are separated by oceans, whereas the countries around the world have geopolitical boundaries.
Exercise Number 2, Earth. Print this out for students. Time saver.

List the things in, around and under my world that I can and cannot see but have always known about

List the things in, around and under my world that I was not aware of, but now know or suspect they are there.