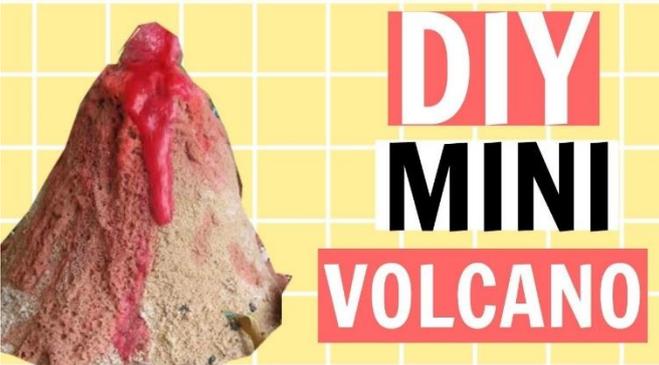


C61

**Hands-on Workshops –
 SDG 4 Quality Education**

Workshop title:	Mini volcano
Workshop owner: (Name of School/ Institution/University/Organization)	Lee Kong Chian Faculty Engineering and Science – Engineering Society
Description of workshop: (objective, content, etc)	<p><u>Procedures</u></p>  <ol style="list-style-type: none"> 1. Add 1 tablespoons of baking soda and ¼ teaspoon of salt to a cup. 2. Pour a few drops of washable paint for a colourful eruption. 3. Add 1-2 drops of liquid dish soap for a more bubbly reaction. 4. Stir the mixture to let it mix evenly. 5. Decorate your own mini volcano based on your creativity. 6. Lastly, pour 1 cup (roughly 120 mL) of vinegar into the mini volcano to start the eruption. <p><u>Principles</u></p> <p>The baking soda and vinegar volcano erupts because of an acid-base reaction. This chemical reaction between vinegar and baking soda creates a gas called carbon dioxide. Carbon dioxide is the same type of gas used to make the carbonation in sodas. The gas gets very excited and tries to spread out when it shaken up with soda. When there is not enough room for the gas to spread out, it will leave through the opening very quickly, causing an eruption.</p> <p>Baking soda (sodium bicarbonate) + Vinegar (acetic acid) → Carbon dioxide + Water + Sodium ion + Acetate ion</p> $\text{NaHCO}_3(\text{s}) + \text{CH}_3\text{COOH}(\text{l}) \rightarrow \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{l}) + \text{Na}^+(\text{aq}) + \text{CH}_3\text{COO}^-(\text{aq})$ <p>Breaking it down:</p> $\text{NaHCO}_3 \rightarrow \text{Na}^+(\text{aq}) + \text{HCO}_3^-(\text{aq})$

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	$\text{CH}_3\text{COOH} \rightarrow \text{H}^+(\text{aq}) + \text{CH}_3\text{COO}^-(\text{aq})$ $\text{H}^+ + \text{HCO}_3^- \rightarrow \text{H}_2\text{CO}_3 \text{ (carbonic acid)}$ $\text{H}_2\text{CO}_3 \rightarrow \text{H}_2\text{O} + \text{CO}_2$
Age group:	Suitable for all age groups
Number of sessions & Duration per session:	1 Session per day • 9.00am – 5.00pm

Kindly provide some pictures/photos on your workshop for publicity use.



(B) Hands-on Workshops – Quality Education

Workshop title:	DIY Keychain
Workshop owner: (Name of School/ Institution/University/Organization)	Lee Kong Chian Faculty Engineering and Science – Engineering Society
Description of workshop: (objective, content, etc)	<p><u>Procedures</u></p>  <ol style="list-style-type: none"> 1. Knead your air dry clay to make it soft. Then, roll out the clay to around 5mm thickness. Can use water to smooth it out. 2. Shape the clay according to your desired shape or pattern. 3. Dry it in oven for a few minutes. Extract it from the oven when it has been dried. (Oven is used to speed up the drying speed). 4. Paint it on it for decoration purpose. <p><u>Principles</u> Air-Dry Clay is a natural earth clay which air-dries to a hard solid. The clay is initially soft and while it is exposed to the air for a long time, it will harden. It is a perfect material to make bookmark, keychain or badges.</p>
Age group:	Suitable for all age groups
Group size:	-
Number of sessions & Duration per session:	1 Session per day <ul style="list-style-type: none"> • 9.00am – 5.00pm
Workshop Space requirement:	4 foldable tables
Other requirements (if any):	-
Budget proposed:	RM 492.00 (Breakdown refer to appendix)
Details of person in charge Name: Email: Contact number:	Dr Steven Lim stevenlim@utar.edu.my 016-7631570

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Kindly provide some pictures/photos on your workshop for publicity use.

