**Why Neutralize? The Impact on Health and the Environment**

**Teachers’ Guide:**

*Learning Outcomes:*

*At the end of the lesson, a student should be able to:*

1. *Explain the meaning of neutralisation*
2. *Write equation for some neutralisation reactions*
3. *Explain the application of neutralisation in daily life*

*Prerequisites :*

*Before watching this video, a student should have prior knowledge of:*

1. *Basic concept of neutralisation*
2. *Writing chemical equation*
3. *pH concept*

*Suggested activities:*

1. *Problem solving - Brainstorming session*
2. *Carry out a simple experiment on the concept of neutralization*
3. *Mind mapping*

*The materials and apparatus in Activity 2 are not only limited to hydrochloric acid. You may use any dilute acid or any common materials such as vinegar.*

*Red cabbage can be used as an indicator to replace universal indicator.*

*How to prepare the red cabbage juice:*

1. *Cut red cabbage into small pieces.*
2. *Put the cabbage into a blender and pour 500 ml of water. You can also grind the cabbage using a using pestle and mortar and then put them into a jug of water and leave them for a few minutes. The water will turn to a bright purplish colour.*
3. *Filter out the leaves using a strainer and pour the mixture into a container.*
4. *Please take note that if the solution is acidic, the red cabbage indicator will turn to red; while if the solution is basic, it will turn to greenish-yellow.*

***Note :***

*If the activities require longer time, this video can be divided into two lessons.*

*Suggestions:*

1. *Lesson 1 is from Segment 1 to Activity 4. Let the students discuss and find the answer.*
2. *In Lesson 2, you can continue with Segment 5 until Segment 6.*