**BLOSSOMS VIDEO LESSON TRANSCRIPT**

**Why Neutralise?**

Hi, I’m hazilah

a chemistry teacher from

Kubang Pasu Science School, Malaysia.

Throughout this video,

you will learn about neutralization,

chemical reaction

in which an acid

and base react to form a salt.

You will also learn about its application in daily life,

espeacially on health and environment.

Alia,

have you taken the breakfast,

I put on the table at the kitchen?

Ask Shasha to join you

Not yet mummy.

We want to play first.

Alia, I brought drinks and mango pickles.

Care to have some?

Wow…my favourite pickles.

All right!

Shasha, my stomach hurt.

What should I do?

Why Alia? What’s wrong?

Untie Hamidah

What’s wrong Alia?

come let me have a look

Mummy…help me.

I feel so painful in my stomach

you hold on please

let me rub some medicated oil on your stomach

Now do you feel better?

Not yet mummy

Okay dear,

take a rest

if you still feel the pain afterwards,

we’ll see a doctor later.

As you can see,

Alia is having a stomach ache.

Madam Hamidah,

Alia’s mother needs help to solve Alia’s problem.

Can you help her out?

Please discuss with your friends

to answer these questions.

What could possibly cause Alia to have a stomach ache?

How to help ease Alia’s pain?

**Activity break #1**

Alia Ali

Hello good morning

What’s your problem young lady?

I feel pain in my stomach

Have you had this problem before?

No, this is the first time

Have you taken your breakfast?

No, I played ‘congkak’ with my best friend,

I drank carbonated drink

and ate pickle mangos.

Then suddenly, I felt pain in my stomach

let me give you a check first.

Please lie over there

Just relax I will check your stomach first

Do you feel pain here?

Now, what she having is gastric

this is course because

she drank carbonated drink

and ate pickle with an empty stomach

which is not good

I will prescribe some medicines

for her to ease her pain

just hand over this prescription

to the pharmacy counter

Thank you Doctor

for Alia

Take 10 ml of this medicine 3 times daily

So audience

Alia has to consume milk of magnesia

3 times daily

Milk of magnesia is a suspension

of manesium hydroxide in water.

A small dose of it

effectively neutralizes excess stomach acid,

which is mostly hydrochloric acid.

Now

let us discuss,

how does milk of magnesia

managed to cure Alia’s stomach pain?

Let’s carry out a simple experiment

to help answer the questions.

You will need these materials

0.1 mol hydrochloric acid

milk of magnesia

and universal indicator

apparatus

glass rod

dropper

beaker

and measuring cylinder

Perform the experiment

with the guidance from your teacher.

Your teacher will post some questions

during the experiment

for example

What is the major component in milk of magnesia?

How does milk of magnesia cure gastric problem?

Have fun?

**Activity break #2**

 I see you have done your experiment

and found the answer.

Good job.

Our stomach contains hydrochloric acid

which dissociates in water

to produce hydrogen ion

and chloride ion.

magnesium hydroxide

also dissociates in water

to produces magnesium ion

and hydroxide ion.

Neutralisation involves

double displacement reactions

which produce salt and water.

Therefore,

when hydrochloric acid reacts

with magnesium hydroxide,

magnesium chloride and water are formed

Now you know how to construct

a chemical equation

involving hydrochloric acid

and magnesium hydroxide.

And now

let’s try a simple activity.

Can you construct other neutralization equations?

Your teacher will provide you with some clay models.

Please follow his or her instructions

on performing the activity.

**Activity break #3**

Well done students

Congratulations

You now know how to construct

a neutralization equation.

Let’s check your equation together

hydrochloric acid

reacts with sodium hydroxide

to produce sodium chloride and water

Sulphuric acid

reacts with calcium hydroxide

to produce calcium sulphate and water

Sulphuric acid reacts

with calcium oxide

to produce

calcium sulphate and water

When hydrochloric acid

and potassium hydroxide react,

potassium chloride

Mummy, I feel relieved and healthy.

I feel no more pain.

Neutralization helps Alia cure her gastric pain.

Do you know that neutralization is

very important in our daily life?

Can you list down the use of neutralization

in your daily life with your friends and teacher?

Your teacher will provide you with

some pictures of a house,

factory, farm and clinic.

Identify occurrence of neutralization

based on those pictures.

**Activity break #4**

Well students,

you have listed down

the importance of neutralization

in our daily life

Based on the activity you just did,

we shall look at the impact of

neutralization on our health and environment.

Let’s explore some locations

and identify how neutralization

cheers up our day

Why does Alia brush her teeth?

What is the substance Alia put onto her toothbrush?

You can also see that after shampooing her hair,

Alia applies some hair conditioner.

Why does she do that?

Please keep these question in your mind.

We will discuss the answer later.

For now,

we’ll move on to another scene

at the kitchen

Madam Hamidah is cleaning the sink using

using baking soda and vinegar.

How does this work?

Do you think Madam Hamidah is trying

to protect the environment?

How?

Suddenly,

Alia entered the kitchen.

She’s crying again but this time,

she claimed that her right leg is swollen

because been bitten by ants.

Quickly,

Madam Hamidah put a few spoon of baking soda

to a small bowl containing water

and put the mixture to Alia’s painful area.

It’s unbelievable

she put the mixture of baking soda and water

onto her daughter’s right leg.

Can you explain why?

Now,

let’s recall the entire questions

and you will have to discuss

with your friends to answer them all

**Activity break #5**

Now student,

you can see that Mr. Jamil

is putting ashes of burnt wood

and also lime stone to the soil.

What do you think is actually happened to the soil?

What causes the soil to become acidic?

Why does Mr. Jamil put ashes and lime stone to the soil?

If the soil is alkaline,

what should the farmer do?

Well students,

you can see that’s the worker is putting something

into the water before the effluent is being discharged

Can you name the subtance?

What is the purpose of the substance?

What happened when a factory waste

is poured untreated into rivers?

You can see that there something injected

into the flue gas.

Can you identified the substance and its purposed?

What happened when a factory let

the flue gas untreated into air?

Discuss with your friends on what

you have seen just now?

**Activity break #6**

Flue gas or sulphur dioxide

is acidic in nature.

Releasing the flue gas without treatment

will result in acid rain.

So,

before releasing the flue gas into the air,

it is treated with calcium hydroxide

or lime water

which has basic property.

Reaction of acidic flue gas

with basic lime water

will results in neutral by product and water

The reaction occurs as follows

Sulphur dioxide

reacts with calcium hydroxide

to form calcium sulphite and water.

Well students,

you have already learned and explore

how neutralization plays an important role in our life.

You can see that neutralization helps to enhance

the quality of our health

and protect our environment.

A polluted environment results in deteriorating our health.

I hope you enjoyed the lesson.

Until we meet again,

Thank you for watching.

**Teacher’s Guide**

Thank you for choosing this lesson for your students.

At the end of the lesson,

your student should be able to explain

the meaning of neutralization,

write equation for some neutralisation reactions,

and explain the application of neutralisation in daily life.

Please acknowledge,

before watching this video,

your student should have prior knowledge

on the basic concept

of neutralization,

writing chemical equation,

and have basic knowledge of pH concept.

I would like to also suggest

some activities you can use to conduct

similar lesson.

You can try problem solving with

brainstorming session,

carry out a simple experiment

on the concept of neutralization

and you may want to use mind mapping.

For Activity 2,

the materials and apparatus

are not only limited to hydrochloric acid.

You may use any dilute

or any common materials such as vinegar.

While, red cabbage can be used

as an indicator to replace universal indicator.

Here are the procedures

on how to prepare the red cabbage juice

First,

cut red cabbage into small pieces.

Then,

put the cabbage into a blender

and pour 500ml of water

You can also grind the cabbage

using a pestle and mortar

and then put them into a jug of water.

Leave them for a few minutes.

The water will turn into a bright purlish colour.

After that,

filter out the leaves using a strainer

and pour the mixture into a container.

Please take note

that if the solution is acidic,

the red cabbage indicator will turn red

while if the solution is basic,

it will turn to greenish yellow.

If you think the activities will require longer time,

you can divide this video into two lessons.

For example,

You can construct lesson 1 from

Segment 1 to Activity 4.

This is where your students

will perform discussion and find answers.

In lesson 2,

you can continue from Segment 5

until Segment 6.