

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,
especially 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 substance?
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 result 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 purplish 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.