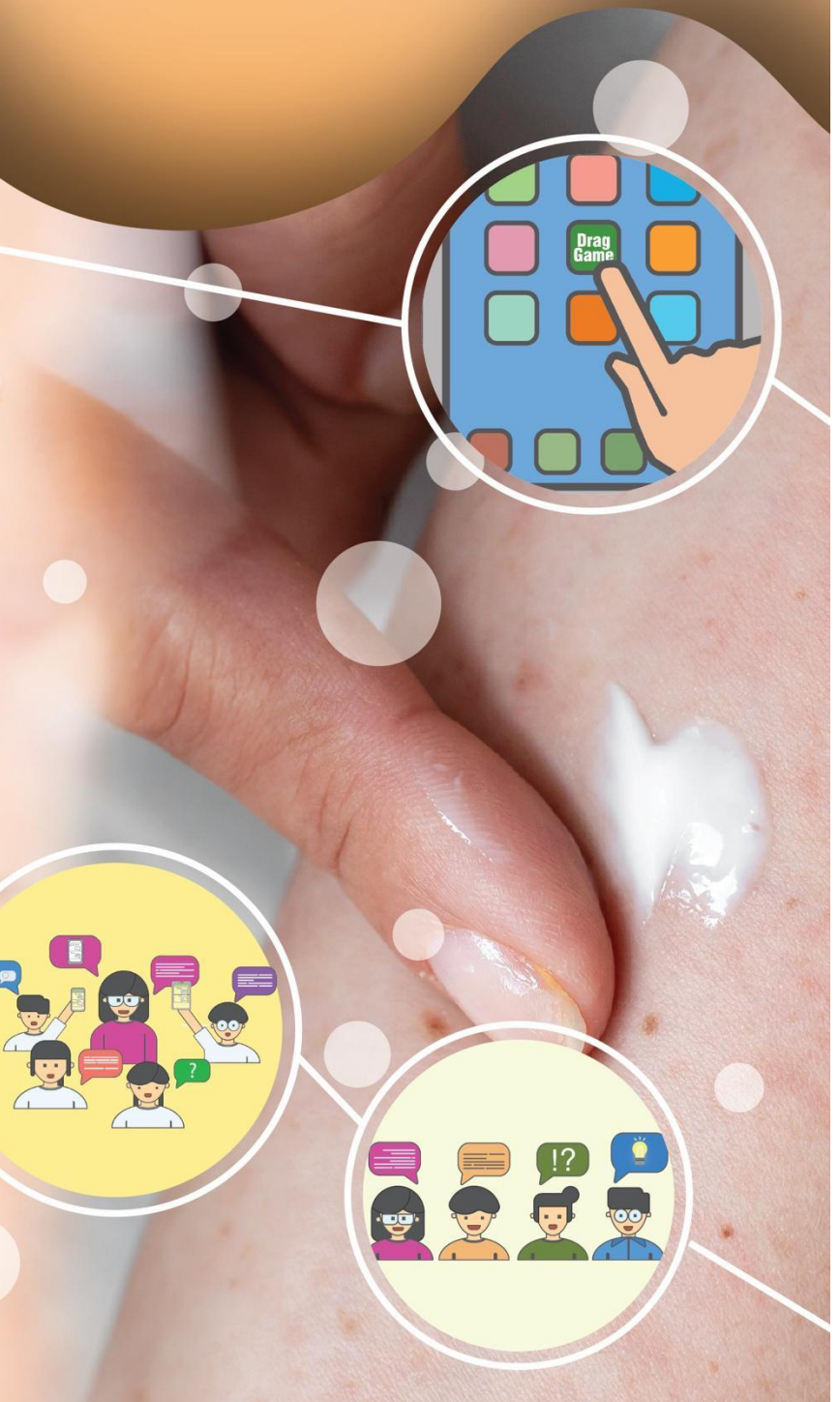
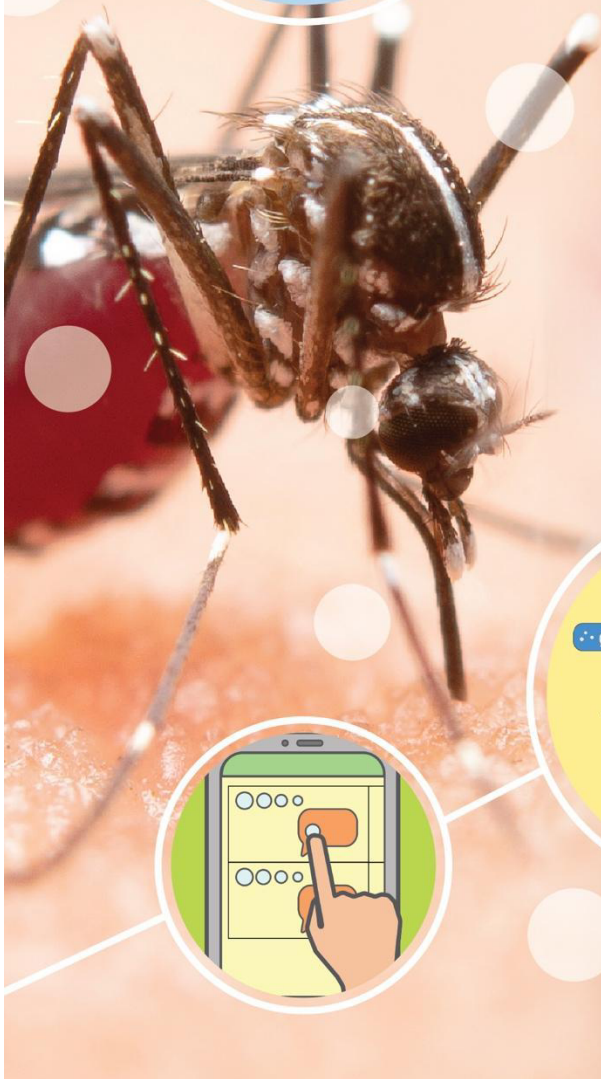
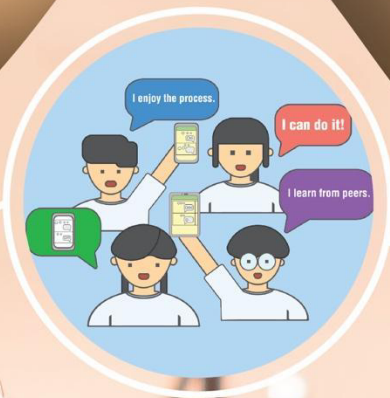


Promoting the Use of Educational Technology in Learning and Teaching in Science (S1-3) Learning and Teaching Resources

Neutralisation



Student Worksheet
Integrated Science (S2)
Neutralisation

Name:		Class:		()	Date:	
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Learning Objectives:

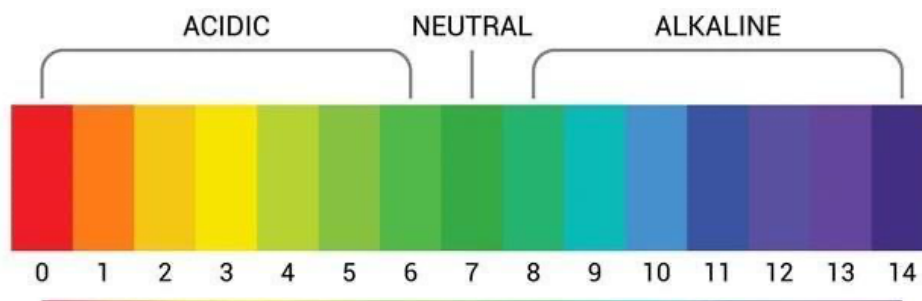
- Recognize that the properties of acids and alkalis ‘cancel out’ each other when they are mixed together.
- Relate pH to the quantity of acid and alkali particles.

Purpose:

To record the pH change when sodium hydroxide is added to hydrochloric acid.

Procedures:

1. Transfer **10 ml** of **hydrochloric acid** into the conical flask.
2. Add a few drops of **universal indicator solution** to the acid in the conical flask.
3. Record the initial color. Match the color of the solution against the pH color chart and record the pH value.
4. Use a syringe to add **0.5 ml** of **sodium hydroxide** to the flask. Shake it well.
5. Record the initial color. Match the color of the solution against the pH color chart and record the pH value.
6. Repeat steps 4 and 5 until the colour of the mixture changes to green.
7. Repeat steps 4 and 5 for a two more times.



Experimental results

Volume of sodium hydroxide added (ml)	0						
pH value of the solution							

Volume of hydrochloric acid added (ml)							
pH value of the solution							

Results and discussion

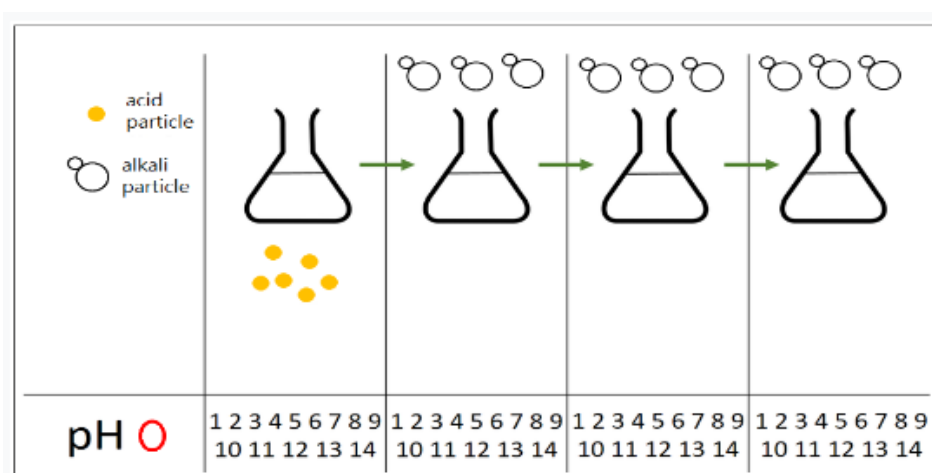
1. How do you know that the neutralization is completed?

2. What is the amount of sodium hydroxide needed for complete neutralization?

3. How does the change in pH relate to the quantity of acid and alkali particles?

Complete the DragGame e-Learning activity at the link:

<https://draggame.e-learning.hk/en/templates/365/view/>



With reference to your particle diagrams, explain why the pH changed when sodium hydroxide is added to hydrochloric acid.
