

## Revision summary

Use the following summary of syllabus dot points and key knowledge within Module 6 to ensure that you have thoroughly reviewed the content. Provide a brief definition or comment for each item to demonstrate your understanding, or code them using the traffic light system – green (all good); amber (needs some review); red (priority area to review). Alternatively, write a follow-up strategy.

Properties of acids and bases	
What are the important considerations when naming an acid or a base?	
What are some of the common properties of acids?	
What are some of the common properties of bases?	
Describe a method you could use to prepare and test a natural indicator.	
How do we know that an indicator is an example of an equilibrium system?	
Write a balanced equation to represent a reaction between a named acid and a named base.	
Write a balanced equation to represent a reaction between a named acid and a named carbonate.	
Write a balanced equation to represent a reaction between a named acid and a named metal.	
How are neutralisation reactions used in everyday life?	
How are neutralisation reactions used in industry?	

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»	Describe a method you could use to measure the enthalpy of neutralisation for the reaction between an acid and a base.	
	Discuss the Arrhenius model of acids.	
	Discuss the Arrhenius model of bases.	
	Discuss the Brønsted–Lowry model of acids.	
	Discuss the Brønsted–Lowry model of bases.	
<b>Using Brønsted–Lowry theory</b>		
	Describe a method you have used to measure the pH of a range of solutions.	
	Discuss the method by which you could relate $[H^+]$ and the pH for a given solution.	
	Discuss the method by which you could relate $[OH^-]$ and the pOH for a given solution.	
	Describe a method you carried out to distinguish between the strengths of different solutions of acids and bases.	
	Use an example to show your understanding of the term ‘conjugate acid/base pair’.	
	Use an example to show your understanding of the term ‘amphiprotic’.	
	Write chemical equations to explain why sodium hydrogen carbonate is amphiprotic.	
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»	Write chemical equations to explain why potassium hydrogen phosphate is amphiprotic.	
	Discuss the aspects of a model you could use to distinguish between a strong and a weak acid or base.	
	Discuss the aspects of a model you could use to distinguish between a concentrated and a dilute acid or base.	
	Describe the method you would use to determine the change in pH of a solution that had been diluted with distilled water.	
	Describe the method you would use to determine the change in pH of a solution which had been neutralised.	
<b>Quantitative analysis</b>		
	Discuss how you would carry out a titration to determine the concentration of an unknown acid or base.	
	Describe the method you would use to prepare the various glassware for use during a titration.	
	Describe the method you would use to prepare a standard solution.	
	Describe the characteristics of a strong acid–strong base titration.	
	Describe the characteristics of a strong acid–weak base titration.	
	Describe the characteristics of a weak acid–strong base titration.	
	Discuss a method you could use to model a neutralisation reaction.	»

»»	Discuss the relationship between $K_a$ and $pK_a$ .	
	Discuss the relative strengths of acids with a high $K_a$ and acids with a low $K_a$ .	
	Discuss the relative strengths of acids with a high $pK_a$ and acids with a low $pK_a$ .	
	Explain how acid–base analytical techniques have been applied in a named industry.	
	Explain how acid–base analytical techniques have been applied by Aboriginal and Torres Strait Islander Peoples.	
	Explain how digital technologies have been employed in acid–base analysis.	
	Describe how you analysed the acid or base composition of a common household substance.	
	Describe a buffer solution and explain how it works.	
	Describe an experiment you carried out to create and test a buffer solution.	
	Assess the importance of buffers in a named natural system.	