

## CHEMISTRY

Learning objectives I can:	I can do this very well	I can do this quite well	I need to do more work on this
<b>3.1</b> Explain that electrolytes are ionic substances in the molten state or dissolved in water			
<b>3.2</b> Describe the movement of ions during electrolysis, such that: <b>a</b> positively charged cations migrate to the negatively charged cathode <b>b</b> negatively charged anions migrate to the positively charged anode			
<b>3.3</b> Demonstrate an understanding that oxidation can involve the loss of electrons and reduction can involve the gain of electrons			
<b>3.4</b> Demonstrate an understanding that reduction occurs at the cathode and that oxidation occurs at the anode in electrolysis reactions			
<b>H 3.5</b> Write half-equations for reactions occurring at the anode and cathode in examples of electrolysis reactions in this unit			
<b>3.6</b> Describe the manufacture of sodium by the electrolysis of molten sodium chloride (details of the electrolytic cell are not required)			
<b>3.7</b> Recall that sodium can be used in street lamps and as a coolant in some nuclear reactors			
<b>HSW 3</b> Describe how phenomena are explained using scientific models			
<b>3.8</b> Electrolyse sodium chloride solution			
<b>3.9</b> Explain the formation of the products in the electrolysis of sodium chloride solution			
<b>3.10</b> Describe how the electrolysis of aqueous solutions can give products from ions in water, rather than from ions of the dissolved solid			
<b>3.11</b> Explain the formation of the products in the electrolysis, using inert electrodes, of some electrolytes, including: <b>a</b> copper chloride solution <b>b</b> copper sulfate solution <b>c</b> sodium sulfate solution <b>d</b> molten lead bromide			
<b>HSW 13</b> Explain how and why decisions about uses of science and technology are made			
<b>3.12</b> Investigate the mass changes at the electrodes during the electrolysis of copper sulfate solution using copper electrodes			
<b>3.13</b> Describe the purification of copper by electrolysis using a pure copper cathode and an impure copper anode			
<b>3.14</b> Explain how electroplating can be used to improve the appearance and/or resistance to corrosion of metal objects			
<b>HSW 12</b> Describe the benefits, drawbacks and risks of using new scientific and technological developments			