

## Year 11 Chemistry Assignment Heat and Reaction

Substance	Latent heat of fusion	Latent heat of vaporisation	Specific heat capacity
<i>Water</i>	334	2272	4.18
<i>Ethanol</i>	108	855	2.44

1. Calculate the amount of heat energy required to melt 55g of water. /2
2. Calculate the amount of heat energy required to heat 55g of liquid water from 0°C to 100°C. /2
3. Calculate the amount of heat energy absorbed when 55g of water evaporates. /2
4. Using your results from questions 1 to 3, approximately how much heat energy is required to turn 55g of ice into steam? /2
5. Calculate the increase in temperature of 100g of ethanol if 6410 J of energy is absorbed. /2
6. Calculate the increase in temperature of 100g of water if 6410 J of energy is absorbed. /2
7. Compare and explain the difference in results for questions 5 and 6. /2
8. Explain why gases tend to mix more quickly than liquids. /2
9. Explain the chemistry principle behind evaporative air conditioning. /2

For each of the following write a **balanced ionic equation**.

1. Some solid sodium is exposed to some chlorine gas. /2
2. Zinc metal is dropped in nitric acid. /2
3. Sulfuric acid is added to some solid calcium carbonate. /2
4. Lithium nitrate solution is added to sodium carbonate solution. /2
5. Ammonium nitrate solution is added to some sodium hydroxide solution. /2
6. Sodium iodide solution is added to some silver nitrate solution. /2
7. Potassium phosphate solution is added to some copper nitrate solution. /2

TOTAL /32