

## Year 8 Reactions Fact Sheet

Chemical reactions and physical changes	
1. List 2 examples of physical changes	<ul style="list-style-type: none"> <li>• Melting</li> <li>• Freezing</li> <li>• Evaporating</li> <li>• Condensing</li> <li>• Dissolving</li> </ul>
2. List 3 ways you can tell a chemical reaction has happened	<ul style="list-style-type: none"> <li>• Fizzing/ bubbles</li> <li>• Colour change</li> <li>• Temperature change (gets hot/cold)</li> </ul>
3. What do we call the chemicals that we have at the start of a reaction?	Reactants
4. What do we call the chemicals that are made in the reaction?	Products
5. How is a chemical reaction different to a physical change?	<ul style="list-style-type: none"> <li>• The products of a chemical reaction are not the same as the reactants</li> <li>• It is often difficult to reverse a chemical reaction</li> </ul>
Exothermic and endothermic reactions	
6. What do we call a reaction which releases heat?	Exothermic
7. What do we call a reaction which takes in heat?	Endothermic
8. List examples of exothermic reactions	<ul style="list-style-type: none"> <li>• Combustion</li> <li>• Oxidation</li> <li>• Neutralisation</li> </ul>
9. Name an example of an endothermic reaction	Thermal decomposition
10. The temperature of a reactant is 30°C. During the reaction the temperature reaches 50°C. Is the reaction exothermic or endothermic? Explain how you can tell	<ul style="list-style-type: none"> <li>• Exothermic</li> <li>• The temperature increased</li> </ul>
11. The temperature of a reactant is 30°C. During the reaction the temperature reaches 15°C. Is the reaction exothermic or endothermic? Explain how you can tell	<ul style="list-style-type: none"> <li>• Endothermic</li> <li>• The temperature decreased</li> </ul>
Neutralisation	
12. State the pH range for an acid	Between 1-6
13. State the pH range for an alkali	Between 8 and 14

14. What pH does a neutral solution have?	7
15. State 2 ways to measure the pH of a solution	<ul style="list-style-type: none"> <li>• Universal indicator</li> <li>• pH probe</li> </ul>
16. State the colour of a strong acid with universal indicator	Red
17. State the colour of a weak acid with universal indicator	Orange/ yellow
18. State the colour of a neutral solution with universal indicator	Green
19. State the colour of a weak alkali with universal indicator	Blue
20. State the colour of a strong alkali with universal indicator	Purple
21. How do you neutralise an acid?	Add an alkali
22. How do you neutralise an alkali?	Add an acid
23. What product is always made in a neutralisation reaction?	A salt
24. Acid + alkali →	salt + water
<b>Combustion</b>	
25. What does combustion mean?	Burning
26. Is combustion exothermic or endothermic?	Exothermic
27. Name the gas that is needed for combustion	Oxygen
28. Name the products made from the combustion of coal, oil and gas	<ul style="list-style-type: none"> <li>• Carbon dioxide</li> <li>• Water</li> <li>• Carbon monoxide (if combustion is incomplete)</li> </ul>
29. Name the product made when a fuel contains sulphur	Sulphur dioxide
<b>Thermal decomposition</b>	
30. What happens to a compound in a thermal decomposition reaction?	<ul style="list-style-type: none"> <li>• It breaks down</li> <li>• When it is heated</li> </ul>
31. Is thermal decomposition exothermic or endothermic? Why?	<ul style="list-style-type: none"> <li>• Endothermic</li> <li>• It needs to be heated</li> </ul>
32. Calcium carbonate →	calcium oxide + carbon dioxide
33. Magnesium carbonate →	magnesium oxide + carbon dioxide
34. _____ → sodium oxide + carbon dioxide	Sodium carbonate

<b>Metals and water</b>	
<b>35. Describe the reactions of potassium, sodium and lithium with water</b>	<ul style="list-style-type: none"> <li>• Fizz, give off hydrogen</li> <li>• Move around</li> <li>• Spark</li> <li>• Turn water blue if it has universal indicator in it</li> </ul>
36. Sodium + water →	sodium hydroxide + hydrogen
37. Potassium + water →	potassium hydroxide + hydrogen
<b>38. Describe the reactions of copper and magnesium with water</b>	<b>Don't react immediately (you probably won't see any reaction)</b>
<b>Metals and oxygen</b>	
<b>39. Describe what happens when copper reacts with oxygen</b>	<b>Outside becomes black (this is copper oxide)</b>
<b>40. Describe what happens when magnesium reacts with oxygen</b>	<ul style="list-style-type: none"> <li>• Bright spark</li> <li>• White powder formed (this is magnesium oxide)</li> </ul>
<b>Reactivity series</b>	
41. I can put the following metals in order of their reactivity: lithium, magnesium, potassium, copper, sodium, calcium	<ul style="list-style-type: none"> <li>• Potassium</li> <li>• Sodium</li> <li>• Lithium</li> <li>• Calcium</li> <li>• Magnesium</li> <li>• Copper</li> </ul>
42. What do we call a reaction where one metal takes the place of the other metal?	Displacement
43. Magnesium sulphate + calcium →	Calcium sulphate + magnesium
44. Calcium sulphate + copper →	No reaction Because calcium is more reactive than copper