1. Colour the pH scale and add the following labels: Neutral, Strong acid, weak acid, strong alkali and weak alkali.

<table>
<thead>
<tr>
<th>pH</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Indicator colour</td>
<td></td>
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</tbody>
</table>

2. What can red litmus be used to test for and what would be the result?

……………………………………………………………………………………

3. Name two common neutralisation reactions

……………………………………………………………………………………

4. Alkalis are special types of bases, which property do alkalis have?

……………………………………………………………………………………

5. What are the names and chemical formula of three common acids

……………………………………………………………………………………

……………………………………………………………………………………

……………………………………………………………………………………

6. Complete the following reactions

   Acid + metal → …………………. + …………………

   Acid + alkali (metal hydroxide) → …………………. + …………………

   acid + metal carbonate → ……………… + ………………… + …………………

   acid + metal carbonate → ……………… + ………………… + …………………
8. Complete the table - Naming salts

<table>
<thead>
<tr>
<th></th>
<th>hydrochloric acid</th>
<th>sulfuric acid</th>
<th>nitric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium hydroxide</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Complete the following equations

- Calcium Hydroxide + hydrochloric acid → …………………. + …………………
- Ammonium hydroxide + sulfuric acid → …………………. + …………………
- Calcium carbonate + nitric acid → ……………. + …………  + …………………
- Magnesium + nitric acid → ……………….. + …………………
- Copper carbonate + hydrochloric acid → …………. + …………  + ……………
Acids & alkalis for KS3 Science - Worksheet (Answers)

1. Colour the pH scale and add the following labels: Neutral, Strong acid, weak acid, strong alkali and weak alkali.

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</tbody>
</table>

See video for colours and labels

2. What can red litmus be used to test for and what would be the result?
   red litmus tests for an alkali, in an alkali it will turn blue

3. Name two common neutralisation reactions
   - Antacid for indigestion
   - lime for acidic soils

4. Alkalis are special types of bases, which property do alkalis have?
   Alkali are bases that dissolve in water

5. What are the names and chemical formula of three common acids
   - Hydrochloric acid HCl
   - Nitric acid HNO₃
   - Sulfuric acid H₂SO₄

6. Complete the following reactions
   - Acid + metal → salt + Hydrogen
   - Acid + alkali (metal hydroxide) → salt + water
   - acid + metal carbonate → salt + water + carbon dioxide
8. Complete the table - Naming salts

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<th>nitric acid</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Sodium chloride</td>
<td>sodium sulfate</td>
<td>sodium nitrate</td>
</tr>
<tr>
<td>potassium hydroxide</td>
<td>potassium chloride</td>
<td>potassium sulfate</td>
<td>potassium nitrate</td>
</tr>
</tbody>
</table>

9. Complete the following equations

- Calcium Hydroxide + hydrochloric acid → calcium chloride + water
- Ammonium hydroxide + sulfuric acid → ammonium sulfate + water
- Calcium carbonate + nitric acid → calcium nitrate + water + carbon dioxide
- Magnesium + nitric acid → magnesium nitrate + hydrogen
- Copper carbonate + hydrochloric acid → copper chloride + water + carbon dioxide