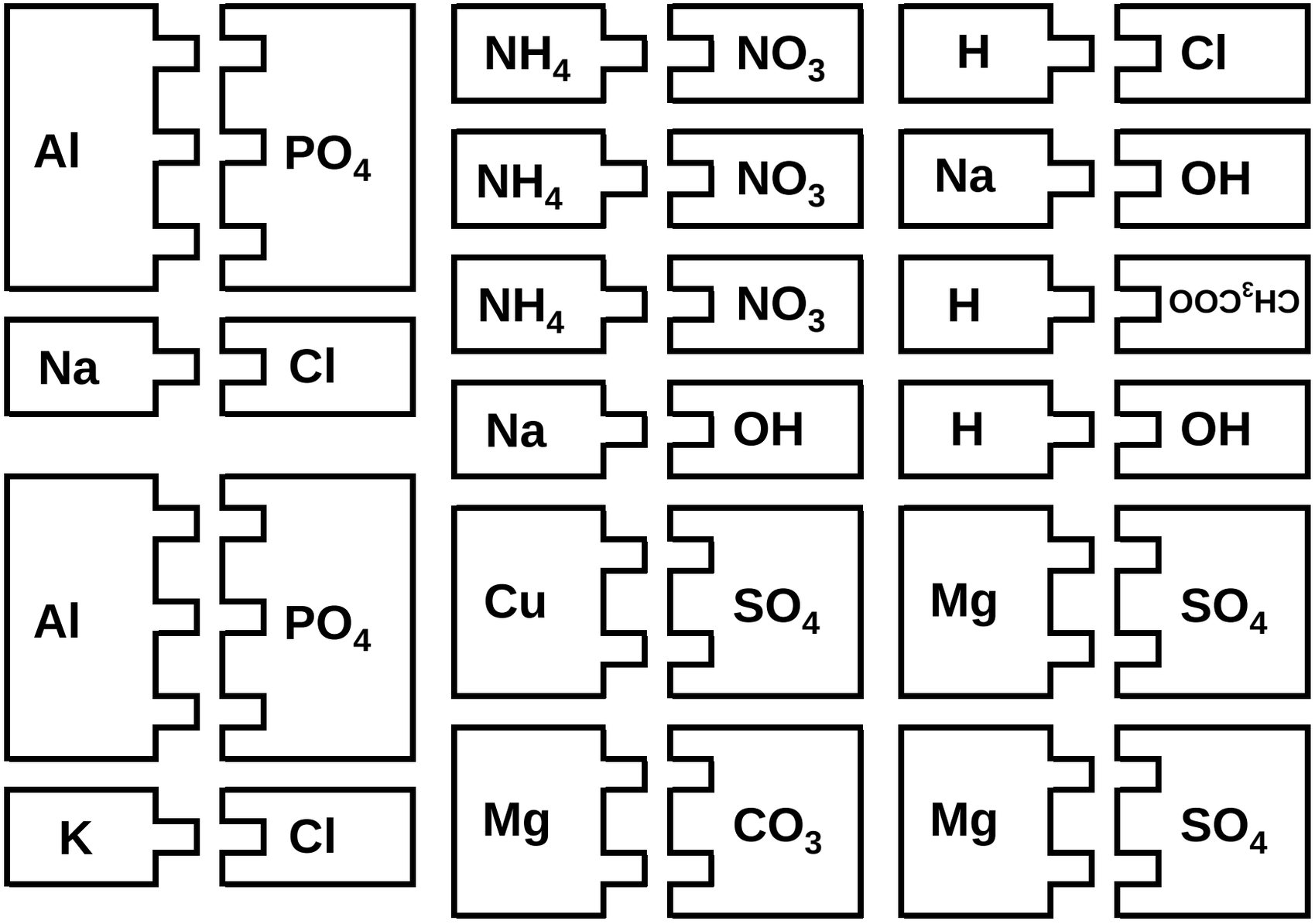

Chemical Formula Key

Positive ions	Formula	Combining Power
Ammonium ion	NH_4^+	1
Hydrogen ion	H^+	1
Potassium ion	K^+	1
Sodium ion	Na^+	1
Copper ion	Cu^{2+}	2
Magnesium ion	Mg^{2+}	2
Aluminum ion	Al^{3+}	3

Negative ions	Formula	Combining Power
Acetate ion	CH_3COO^-	1
Chloride ion	Cl^-	1
Hydroxide ion	OH^-	1
Nitrate ion	NO_3^-	1
Carbonate ion	CO_3^{2-}	2
Sulfate ion	SO_4^{2-}	2
Phosphate ion	PO_4^{3-}	3

Determine the formula of the following compounds with the help of the cut-out model sheet.

No	Chemical	Formula
1	copper carbonate	
2	copper sulfate	
3	copper chloride	
4	potassium nitrate	
5	potassium hydroxide	
6	potassium chloride	
7	aluminum phosphate	
8	aluminum chloride	
9	magnesium carbonate	
10	magnesium sulfate	
11	magnesium chloride	
12	sodium carbonate	
13	sodium phosphate	
14	sodium sulfate	
15	sodium nitrate	
16	sodium hydroxide	

No	Chemical	Formula
17	sodium chloride	
18	ammonium nitrate	
19	ammonium hydroxide	
20	ammonium chloride	
Brackets are need if the number of polyatomic groups is greater than one.		
21	aluminum sulfate	
22	aluminum nitrate	
23	aluminum hydroxide	
24	copper hydroxide	
25	copper nitrate	
26	ammonium carbonate	
27	ammonium phosphate	
28	ammonium sulfate	
29	magnesium nitrate	
30	magnesium phosphate	

No	Chemical	Formula
31	magnesium hydroxide	
By convention organic groups like the acetate ion are written first. The metal ion is written last. This reflects the structural formula.		
32	potassium acetate	
33	ammonium acetate	
34	sodium acetate	
Match the hydrogen ions in the cut-out model with the correct groups.		
35	water	
36	hydrochloric acid	
37	nitric acid	
38	sulfuric acid	
39	carbonic acid	
40	phosphoric acid	
41	acetic acid	

Chemical Formula Key

Positive ions	Formula	Combining Power
Ammonium ion	NH_4^+	1
Hydrogen ion	H^+	1
Potassium ion	K^+	1
Sodium ion	Na^+	1
Copper ion	Cu^{2+}	2
Magnesium ion	Mg^{2+}	2
Aluminum ion	Al^{3+}	3

Negative ions	Formula	Combining Power
Acetate ion	CH_3COO^-	1
Chloride ion	Cl^-	1
Hydroxide ion	OH^-	1
Nitrate ion	NO_3^-	1
Carbonate ion	CO_3^{2-}	2
Sulfate ion	SO_4^{2-}	2
Phosphate ion	PO_4^{3-}	3

ANSWERS

No	Chemical	Formula
1	copper carbonate	$CuCO_3$
2	copper sulfate	$CuSO_4$
3	copper chloride	$CuCl_2$
4	potassium nitrate	KNO_3
5	potassium hydroxide	KOH
6	potassium chloride	KCl
7	aluminum phosphate	$AlPO_4$
8	aluminum chloride	$AlCl_3$
9	magnesium carbonate	$MgCO_3$
10	magnesium sulfate	$MgSO_4$
11	magnesium chloride	$MgCl_2$
12	sodium carbonate	Na_2CO_3
13	sodium phosphate	Na_3PO_4
14	sodium sulfate	Na_2SO_4
15	sodium nitrate	$NaNO_3$
16	sodium hydroxide	NaOH

No	Chemical	Formula
17	sodium chloride	NaCl
18	ammonium nitrate	NH_4NO_3
19	ammonium hydroxide	NH_4OH
20	ammonium chloride	NH_4Cl
Brackets are need if the number of polyatomic groups is greater than one.		
21	aluminum sulfate	$Al_2(SO_4)_3$
22	aluminum nitrate	$Al(NO_3)_3$
23	aluminum hydroxide	$Al(OH)_3$
24	copper hydroxide	$Cu(OH)_2$
25	copper nitrate	$Cu(NO_3)_2$
26	ammonium carbonate	$(NH_4)_2CO_3$
27	ammonium phosphate	$(NH_4)_3PO_4$
28	ammonium sulfate	$(NH_4)_2SO_4$
29	magnesium nitrate	$Mg(NO_3)_2$
30	magnesium phosphate	$Mg_3(PO_4)_2$

No	Chemical	Formula
31	magnesium hydroxide	$Mg(OH)_2$
By convention organic groups like the acetate ion are written first. The metal ion is written last. This shows the structural formula.		
32	potassium acetate	CH_3COOK
33	ammonium acetate	CH_3COONH_4
34	sodium acetate	CH_3COONa
Match the hydrogen ions in the cut-out model with the correct groups.		
35	water	H_2O
36	hydrochloric acid	HCl
37	nitric acid	HNO_3
38	sulfuric acid	H_2SO_4
39	carbonic acid	H_2CO_3
40	phosphoric acid	H_3PO_4
41	acetic acid	CH_3COOH