STATION SET-UP AND GUIDE

Materials

PPE (Gloves, safety goggles, apron)	Waste disposal containers (one for each station)	Concentrated hydrochloric acid
Solid zinc	Solid copper	Solid sulfur
Crucibles/heat-safe dishes	Copper (II) carbonate	Solid sodium bicarbonate
Evaporating dishes	Magnesium strips	Bunsen burners
Disposable pipettes	Potassium iodide solution	Lead (II) nitrate solution
Test tube clamps	Wooden splints	Test tubes with stands
Spatulas	Tongs	

Station 1: Single Replacement, Redox	
Reaction	$2Zn + 2HCl \rightarrow H_2 + 2ZnCl$
Materials Needed	• Solid zinc • Concentrated hydrochloric acid • Test tube and stand (or test tube rack) • Disposable pipette • Wooden splint (to test for hydrogen gas) • Test tube clamp (if heating is involved or for safe handling) • Waste disposal container

Station 2: Decomposition	
Reaction	$CuCO_3 \rightarrow CuO + CO_2$
Materials Needed	• Copper (II) carbonate • Bunsen burner • Test tube + stand • Test tube clamp (or test tube holder) • Spatula • Wooden splint (optional, to test for CO_2 by extinguishing flame) • Waste disposal container

Station 3: Combustion, Synthesis, Redox	
Reaction	$2Mg + O_2 \rightarrow 2MgO$
Materials Needed	• Magnesium strip • Bunsen burner • Tongs • Evaporating dish • Waste disposal container

Station 4: Double Replacement, Precipitation	
Reaction	$KI + Pb(NO_3)_2 \rightarrow KNO_3 + PbI_2\ (s)$

Station 4: Double Replacement, Precipitation	
Materials Needed	• Potassium iodide solution • Lead (II) nitrate solution • Test tubes + stand • Disposable pipettes • Waste disposal container

Station 5: Synthesis, Redox	
Reaction	$Cu + S \rightarrow CuS$
Materials Needed	• Solid copper • Solid sulfur • Bunsen burner • Test tube + stand • Test tube clamp • Tongs • Crucible or heat-safe dish • Waste disposal container

Station 6: Acid-Base	
Reaction	$HCl + NaHCO_3 \rightarrow NaCl + CO_2 + H_2O$
Materials Needed	• Concentrated hydrochloric acid • Solid sodium bicarbonate • Test tube + stand • Disposable pipette • Waste disposal container

Adapted from https://www.chemedx.org/system/files/activity/types-chemical-reactions/types-chemical-reactions-student.pdf