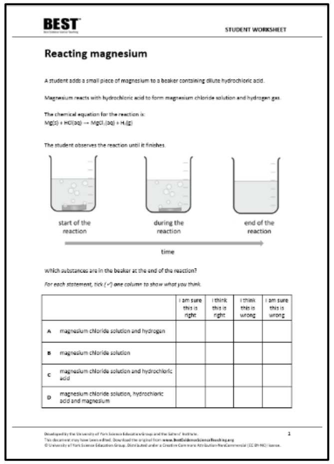
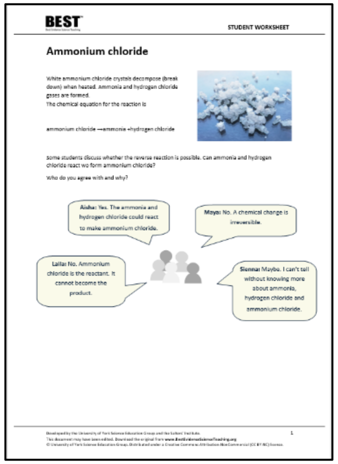
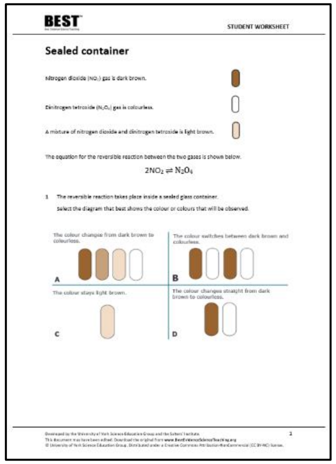
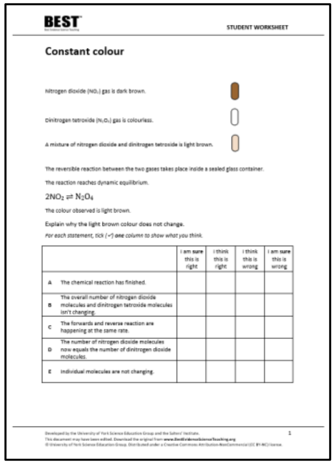
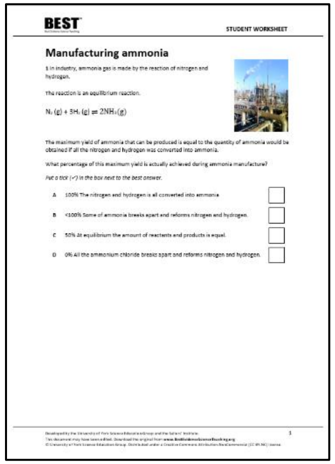
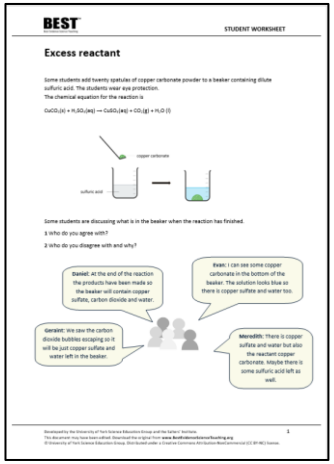
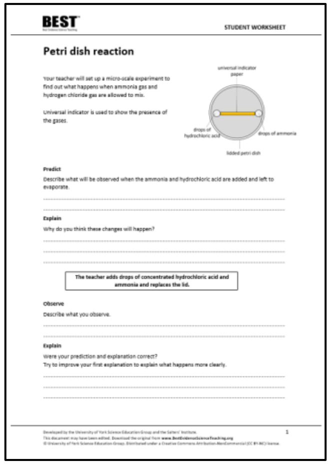
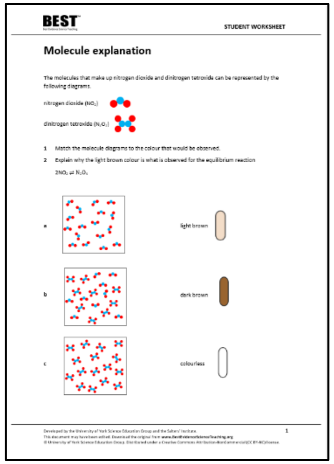
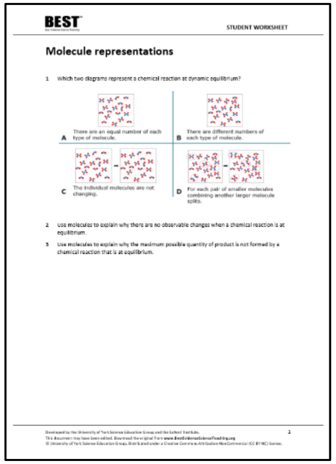
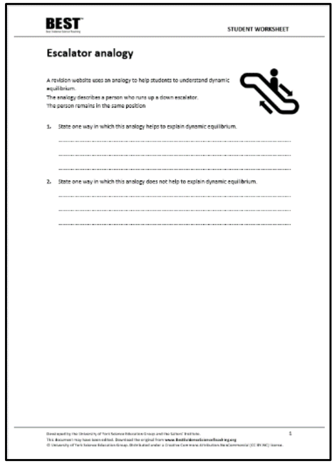
Chemistry > Big idea CCR: Chemical reactions > Topic CCR8: Chemical equilibrium

Key concept (age 14-16)

CCR8.1: Dynamic equilibrium

Progression toolkit: Dynamic equilibrium

Learning focus	At dynamic equilibrium the rate of the forwards reaction is equal to the rate of the reverse reaction meaning that the reaction mixture contains both reactants and products.				
As students' conceptual understanding progresses they can:	CONCEPTUAL PROGRESSION → Recognise that a reactant added in excess will still be present in the final reaction mixture.	Recognise that some chemical reactions are reversible.	Recognise that, in a closed system, the forwards and reverse reactions can take place at the same time.	Explain, in terms of the equal rates of the forwards and reverse reactions, why no macroscopic changes are observed when a system is at dynamic equilibrium.	Recognise that if a reaction is at dynamic equilibrium the reaction mixture will contain both products and reactants.
Diagnostic questions	Reacting magnesium	Ammonium chloride	Sealed container	Constant colour	Manufacturing ammonia
Response activities	Excess reactant	Petri dish reaction	Molecule explanation	Molecule representations Escalator analogy	

Reacting magnesium	Ammonium chloride	Sealed container	Constant colour	Manufacturing ammonia
				
Confidence grid	Talking heads	Simple multiple choice	Confidence grid	Simple multiple choice
Excess reactant	**Petri dish reaction**	**Molecule explanation**	**Molecule representations**	**Escalator analogy**
				
Talking heads	PEOE	Clarifying	Clarifying	Critiquing a representation