


Physics > Big idea PMA: Matter > Topic PMA2: Floating and sinking

Key concept (age 11-14)

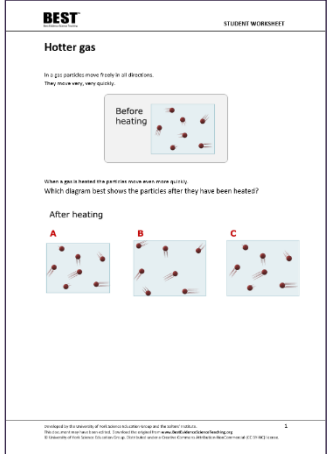
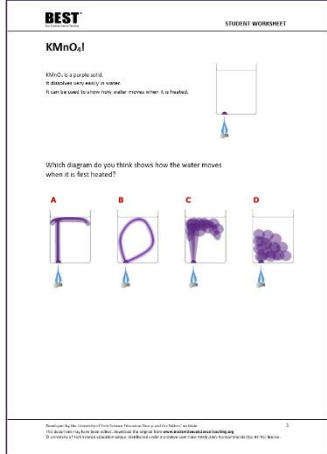
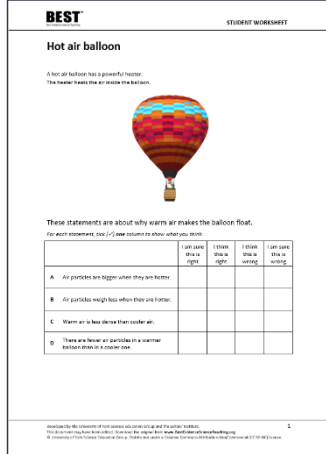
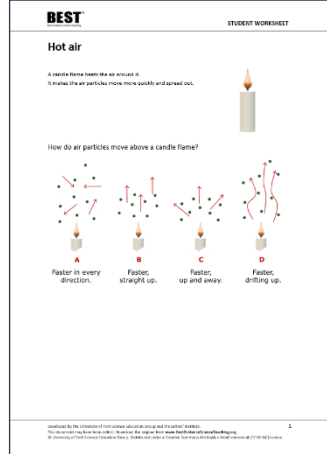
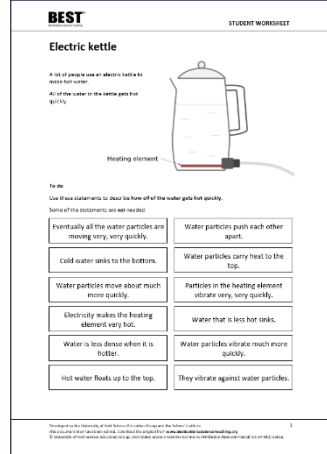
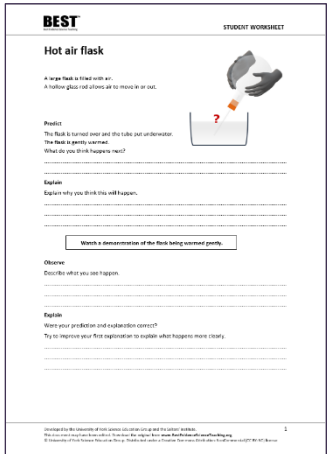
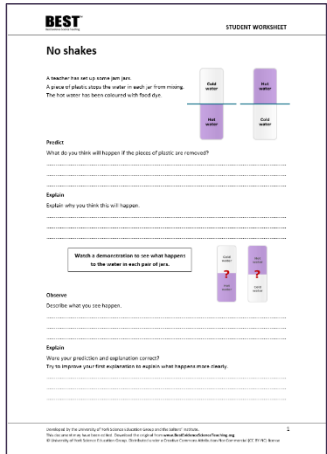
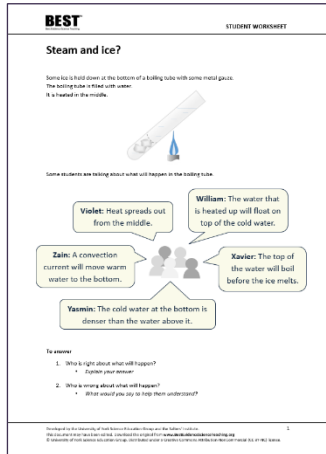
PMA2.3: Convection

Progression toolkit: Convection

Learning focus	Convection is a process that transfers energy through a fluid, as warmer less dense regions of fluid rise and cooler more dense regions of fluid sink.				
As students' conceptual understanding progresses they can:	<div>CONCEPTUAL PROGRESSION</div> 				
	Describe how the properties of particles in a gas change as the gas is heated. P	Describe convection currents in liquids and gases.	Explain what happens to the density of a gas when it is heated.	Explain what causes convection currents.	Explain how convection currents transfer energy through a fluid.
Diagnostic questions	Hotter gas	KMnO ₄ !	Hot air balloon	Hot air	Electric kettle
Response activities			Hot air flask	No shakes	Steam and ice?

Key:

P Prior understanding from earlier stages of learning

Hotter gas	KMnO ₄ !	Hot air balloon	Hot air	Electric kettle
 <p>Hotter gas</p> <p>Hotter gas</p> <p>Before heating</p> <p>After heating</p> <p>1</p>	 <p>KMnO₄!</p> <p>1</p>	 <p>Hot air balloon</p> <p>1</p>	 <p>Hot air</p> <p>1</p>	 <p>Electric kettle</p> <p>1</p>
Simple multiple choice	Simple multiple choice	Confidence grid	Simple multiple choice	Sequencing
 <p>Hot air flask</p> <p>1</p>	 <p>No shakes</p> <p>1</p>	 <p>Steam and ice?</p> <p>1</p>		
Predict, explain, observe, explain PEOE	Predict, explain, observe, explain PEOE	Talking heads		