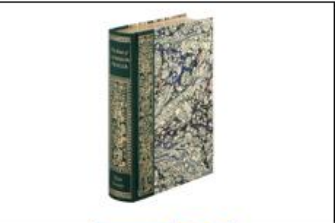
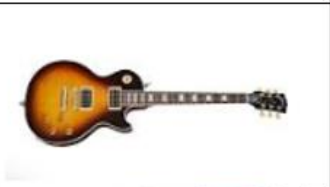
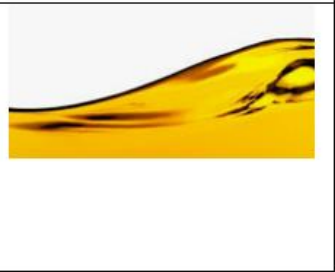




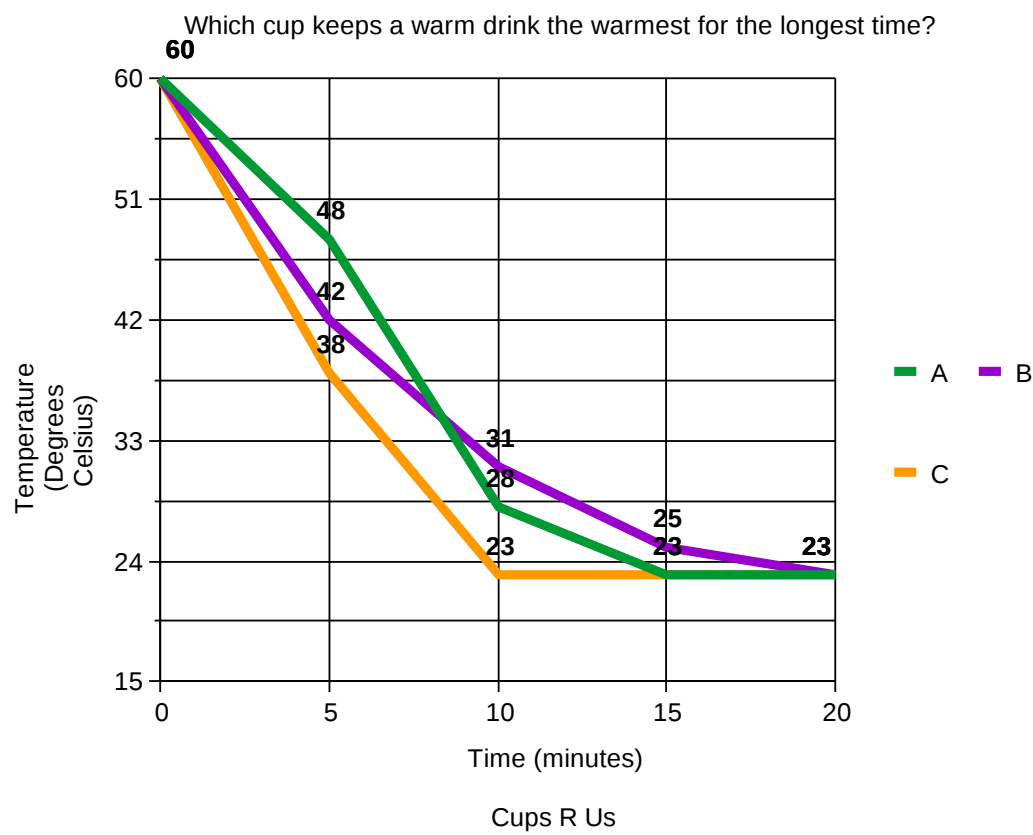
Wider Curriculum Spring Unit Plan for Home learning		
Subject:	Science	Unit: Changing Materials
		Year: 5
Session		
Session 1	Use this website to research about people involved in chemistry now and in the past http://www.rsc.org/diversity/175-faces/index73bb.html?s=1 • The range of careers in chemistry includes..... • Someone I was interested in was because..... • Something I was surprised by was..... • I would nominate..... to have a poster made to be shared at school because.....	
Session 2	Why are objects made from certain materials? • Have a look at the pictures in Resource 1 below. How could you sort them into groups? What would be the criteria for doing so? • Have a look around your house. Find five objects that are made from different materials. • Visit this website to help you draw conclusions about why the objects are made from its material	
Session 3	Which material is best at keeping tea warm? • Looking at the graph in Resource 2. Which cup kept the tea warmest for longest? Which material might the cup be made of? • Watch this clip about insulators and conductors. • Can you help your teachers? They need to keep the tea in their mugs warm for longer. Can you suggest a good material to use? What material would not be effective for this job? Explain your thinking to an adult in your house.	
Session 4	What affect will a coat have on a human and an ice man? • Take the quiz at the bottom of this website to test your knowledge of insulators and conductors. • If we built two snowmen next to each other and put a winter's coat on one of them, which snowman would melt first? Make a prediction to an adult in your house, explaining the scientific reasons for your prediction. • Visit this website and see if you are able to conduct the experiment described using ice cubes and materials from your home.	
Session 5 and 6	How can we separate mixtures of solids? • Draw a diagram to show what the particles of solids, liquids and gases would look like under a microscope. How would they move? • The children in a Reception class have lost their favourite toy cars in the sandpit. How could they retrieve them? What would you need? Explain your ideas to an adult. • Now, one of the Reception children have spilt a bowl of water in the sandpit. How could they separate the water from the sand? Would they need to different resources than those needed to separate the toy cars? • Visit here to learn more. Take the quiz at the end of the page. Can you now describe your method for finding the toy cars and separating the water from the sand using scientific vocabulary?	

Session 7	What affects how well sugar dissolves? • What effects how well the sugar dissolves? Watch the clips on this website. • Conduct an experiment to test if the temperature of a liquid affects the rate at which a solid dissolves to make a solution. Do not conduct this experiment unless an adult is able to work with you. Make three mugs of the same amount of water. One mug should contain cold water, one should contain water that has been boiled in the kettle and left to sit for five minutes and the third mug should contain water boiled in the kettle and poured directly in the mug. How many teaspoons of sugar can you add to the water before the sugar stops dissolving? • Record your findings in the table in resource 3. What conclusions can you draw from your experiment?
Session 8	Can we separate materials through evaporation? • Please watch the clips here. • Take the quiz at the bottom of the page. • Can you write a short paragraph which answers the key question “Can we separate materials through evaporation?” Will it work for all materials?
Session 9	Which changes cannot be reversed? • What changes of state have you learned about so far? In Year 4, you investigated freezing and melting and this year, you thought about making a mixture of two or more solids. Were we able to reverse these changes? How? • Watch the clips and take the quiz from this website. • There are 3 types of irreversible change: heating, mixing and burning. What irreversible changes do you see every day? Write a list and share with an adult in your house.
Session 10	What do you know now? Create your own illustrated fact sheet about changing materials See Resource 4 for an idea but you can be as creative as you like in your presentation.

Resource 1

Resource 2



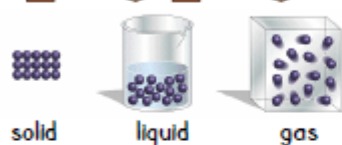
Resource 3

Hot Water		Warm water		Cold Water	
1 tspn		1 tspn		1 tspn	
2 tspn		2 tspn		2 tspn	
3 tspn		3 tspn		3 tspn	
4 tspn		4 tspn		4 tspn	

Resource 4

Reversible and Irreversible Changes Fact Sheet

PHYSICAL CHANGES



Changing state from solid to liquid to gas and back again is a reversible change.

Heating is the process of increasing the temperature. Cooling is the opposite process where temperature is decreased. We use a thermometer to measure temperature.



A wind turbine helps to generate electricity from renewable sources.



When chocolate is melted it can solidify again. The change is reversible.

Cooking eggs, by frying, boiling, scrambling, poaching etc., is always an irreversible change.



When oil, vinegar and egg yolks are mixed together; they make a precipitate called mayonnaise. This change is irreversible.

Dissolving sugar in water is a reversible change. When the water is evaporated it leaves the sugar behind.



When vitamin tablets effervesce (fizz) a gas is produced. This is an irreversible change.

Any reaction, such as burning, that causes new substances to be formed is called a **CHEMICAL CHANGE**. These changes are irreversible.



Coal, gas and oil are all fossil fuels. They non-renewable energy sources.