Topic	The rock cycle	**Level**	For students aged 11-16
Outcomes	1. To state the names of the three main types of rock 2. To understand how one rock can be converted into another rock overtime. Most rocks have gone through many cycles. 3. To understand why models are useful in science		
Information for teachers	The crayon rock cycle model is a great practical demonstration that helps students understand the cyclic nature of rock formation. This activity has been designed to be used alongside this demonstration to make sure students are clear on what features of the model relate to the real world and which features don't. This activity is probably best used after you have first introduced the rock cycle – make sure students have had time to grapple with the concept first, otherwise they won't appreciate the explaining power of the model. When you carry out this demonstration it can be helpful to have a good diagram of the rock cycle on the board to refer to. This will help students to make the link between the model and the scientific processes it is trying to explain. A great example of the crayon rock cycle to demo is here.		

Feature of the model	What feature or process from the rock cycle did it represent?	What pars of this model are similar to the rock cycle?	What parts of this model are different to the rock cycle?
The wax crayons			
		Crayons and rocks are both broken down into smaller pieces when a force is applied	
	Sedimentation, compaction and cementation to make sedimentary rocks		
		Force and heat were applied to the crayon but it didn't melt fully	
			The Earth's core is hotter than the candle Igneous rocks will contain crystals.

Feature of the model	What feature or process from the rock cycle did it represent?	What pars of this model are similar to the rock cycle?	What parts of this model are different to the rock cycle?
The wax crayons	The rocks – igneous, metamorphic or sedimentary	Crayons and rocks can both have different colours They are both made from compounds	Rocks are made from minerals whereas crayons are made from wax Crayons have a lower melting temperature than rocks
Scraping the crayons with a knife	Physical weathering	Crayons and rocks are both broken down into smaller pieces when a force is applied.	In the model a knife is used to break up the crayons but in the rock cycle weathering is caused by wind or water.
Crayon pieces arranged in layers and then squashed between foil	Sedimentation, compaction and cementation to make sedimentary rocks	A force is needed to squash the sediments and crayon pieces together. Bits of crayons and rock sediments then stick together.	In the rock cycle this takes millions of years to happen. In the model this happened straight away.
Crayon is warmed and squeezed between foil	Formation of a metamorphic rock	Force and heat were applied to the crayon but it didn't melt fully	Energy is transferred from the Earth's core in the rock cycle to the rock. Energy is transferred from the hot water to the crayon in the model. Igneous rocks will contain crystals.
Crayon is melted and then cooled	Formation of an igneous rock	The crayon and rocks melt fully.	The Earth's core is hotter than the candle used in the model. Igneous rocks will contain crystals.

Go deep….

1. What parts of the rock cycle has the model helped you to understand?
2. Why don’t igneous rocks contain fossils?
3. How could you extend this model to show erosion?
4. Where does the rock cycle start?!