

Science Learning Design

Topic & Subtopics :	Variety and classification	Class:	Year 6	Duration:	2 periods
Content Learning Objectives:	Recognise similarities and differences between materials based on their properties (glass and ceramic)				

Teaching & Learning Activities		Resources	Summary				
<p>Tuning in (Engage, Elicit) <i>Determine prior knowledge and prepare pupils</i></p> <p>10 minutes</p>	<ul style="list-style-type: none">Pupils are shown videos on how to make the handle of a ceramic mug and how to make a perfume bottle. <p>https://www.youtube.com/watch?v=FsC0VzEBdmg</p> <p>https://youtu.be/DGz88-mo_54</p>	<p>How to make the handle of a ceramic mug (1.44 min)</p> <p>How to make a glass bottle (1.44 min)</p> <p>To play the video, a QuickTime Player is needed.</p>					
<p>Finding out & Sorting out (Explore) <i>Time to locate, gather information, organise and process ideas.</i></p> <p>10 minutes</p>	<ul style="list-style-type: none">From the tuning in activity, pupils discuss the videos with the teacher<ul style="list-style-type: none">✓ From the video 1, what material is the mug made from?✓ What is it made from?✓ From video 2, why is the man blowing into the glass?✓ Why does the man need to heat the glass?.Pupils put all the objects that they have brought with them on the table.Based on the video shown, pupils sort out the objects on front of them according to the two types of materials. <p><i>As you have said earlier, the lady is making the mug from ceramic and the man is making the perfume bottle from glass. So I want you to sort out the things in front of you into ceramic and glass.</i></p> <table><tr><td>Materials made from glass</td><td>Materials made from ceramic</td></tr><tr><td></td><td></td></tr></table>	Materials made from glass	Materials made from ceramic			<p>Bottles, drinking glasses Mugs Vases Cups Flower pots</p>	<p>Expected outcomes:</p> <p>The mug is made from clay.</p> <p>It is brown like clay.</p> <p>We need to wet the clay so that it is easy too turn into any shape we want.</p> <p>The man blows into the glass to make it big.</p> <p>The man heats the glass so that he can shape it easily and not to break it.</p>
Materials made from glass	Materials made from ceramic						

<p>Making Conclusions (Explain)</p> <p><i>Draw conclusion and consolidate understanding</i></p> <p>20 minutes</p>	<ul style="list-style-type: none">Pupils discuss with teacher of why they categorised the objects into materials made of glass and materials made from ceramic.<ul style="list-style-type: none">✓ <i>Why do you say that the flower vase is made from ceramic?</i>✓ <i>Why do you say that the bottle is made from glass?</i>.... etcPupils feel and touch each object and describe them to their partner.<p><i>This bottle is hard. It is transparent.</i> <i>This vase is hard. It is opaque.</i></p>On a piece of A3 paper, each pair/group will write the similarities and differences of glass and ceramic. <table><tr><td>differences</td><td>similarities</td></tr><tr><td></td><td></td></tr></table>	differences	similarities				<p>Similarities:</p> <ul style="list-style-type: none">- Used for making household utensils- Both are easily broken (brittle)- Hard- etc <p>Differences</p> <ul style="list-style-type: none">- Glass is transparent- Ceramic is opaque- etc
differences	similarities						
<p>Go further (Elaborate, Extend, Evaluate)</p> <p><i>Apply knowledge to develop further understanding</i></p> <p>20 minutes</p>	<ul style="list-style-type: none">Pupils are shown the 4 pictures briefly.Each pair will be given a task as a house contractor and a home owner.Pupil A be the house contractorPupil B be the home owner.They are to talk about what each of them could do with the glass and ceramic.They write down their ideas on a piece of paper.Question:<ul style="list-style-type: none">✓ <i>How will they use the different materials?</i>✓ <i>Why will they use the materials for the purpose describe?</i>✓ <i>In which cases could they use other material?</i>✓ <i>Why have they chosen this one rather than the other?</i>To further test pupils understanding, worksheets are given for pupils to do <p>Notes</p> <p><i>House contractor – people who build the house</i></p> <p><i>Home owner – people who live in the house</i></p>	<p>Tiles</p> <p>Glass antiques</p> <p>Pictures of a modern house</p> <p>Picture of a staircase use ceramic handrail</p> <p>Picture of a staircase using glass</p> <p>Picture of one of the room in the house</p>	<p>Contractor:</p> <p>Glass – windows</p> <p>Ceramic – balcony, tile</p> <p>Home owner:</p> <p>Glass – antique displays</p> <p>Ceramic – flower pots, vases</p>				

Evaluation <i>(with respect to the Content Learning Objectives)</i>	
What worked well?	What would make it even better next time?