

Video question script: Rock around your school

Question/Activity	Likely response	Rationale
In teaching about the Earth we use outdoor activities to explore Earth materials. This example explores the materials used to build your school through the Earthlearningidea: 'Rock around your school'.		Preparation for bridging from the model to real Earth processes
Take the pupils outside to a safe area with a good view of the school buildings		
<p>Explain that you are going to ask them to either:</p> <ul style="list-style-type: none"> • complete a worksheet of all the materials they can see, used to build the school or • discuss as a group all these materials through answering these questions for each material: <ul style="list-style-type: none"> ○ What is the name of the type of material? ○ Where did you see it being used? ○ Is it natural or manufactured? ○ If manufactured, did the original material come from the ground? <p>Give them an example as a 'starter', e.g. window glass</p>		Introduction to the activity
Ask them to carry out the activity	Possible answers are given in Table 1 below	They soon construct the pattern that everything that is not formed from something that is grown* (e.g. timber) is made from material from the ground. *Although of course, even things that have grown have grown from the ground
<p>Review the activity – giving them the extra information in Table 1 below</p> <p>Note for them that the only material NOT found in the ground is timber – which grew from the ground</p>		This confirms the pattern they found, through discussion. Cognitive conflict occurs when they have to discuss the origins of some materials
Extend the activity in their own time by giving them a worksheet and rock identification key inviting them to identify, describe and think about natural materials used in buildings on their way home from school or in other areas	The responses depend upon the different materials they find	They may be able to construct patterns from the data they collect in this activity
Discuss their findings on their return to school – seeking in particular to identify and discuss any patterns		

Table 1: Materials used in the buildings and their surroundings (natural and manufactured)

What is the name of the type of material?	Where did you see it being used?	Is it natural or manufactured?	If manufactured, did the original material come from the ground?	Extra information – given later Made from:
<i>e.g. Glass</i>	<i>Classroom windows</i>	<i>Manufactured</i>	Yes	Silica sand (main component) – from silica (quartz)-rich beach or inland deposits
Stone blocks	Wall	Natural	Yes	Natural stone
Bricks	Wall	Manufactured	Yes	Brick clay – moulded and fired
Cement blocks	Wall	Manufactured	Yes	Cement from limestone and clay plus aggregate (sand/gravel or crushed rock)
Roofing slates	Roof	Natural	Yes	Natural slate
Roofing tiles	Roof	Manufactured	Yes	Brick clay – moulded and fired

Stone window surrounds or wall corners	Window surrounds, wall corners	Natural	Yes	Natural stone
Wood/timber frames	Window frames	Natural	Grew from the ground	Trees
Plastic window frames	Window	Manufactured	Yes	Oil or coal
Plastic gutter	Gutter	Manufactured	Yes	Oil or coal
Iron gutter	Gutter	Manufactured	Yes	Iron ore; limestone
Iron railings	Railings	Manufactured	Yes	Iron ore; limestone
Galvanised lamp post	Lamp post	Manufactured	Yes	Zinc ore
Asphalt/bitumen	Car park	Manufactured	Yes	Oil or coal; aggregate (sand/gravel or crushed rock)
Concrete kerbstone	Pavement	Manufactured	Yes	Cement from limestone and clay plus aggregate (sand/gravel or crushed rock)
Concrete flagstone	Pavement	Manufactured	Yes	Cement from limestone and clay plus aggregate (sand/gravel or crushed rock)
Paint	Door	Manufactured	Yes	Oil; pigments from different minerals
Lightning conductor	From roof to ground	Manufactured	Yes	Copper or aluminium ore
				Note that manufacturing processes to make the materials above need energy and most of this comes from gas, oil or coal, from the ground