

Through the Window KS3 Earth science - participant card

1. What can you see outside today?

What rock cycle processes are happening today? What products have they left?

Rock cycle activity	Rock cycle process	Tick if this is happening now, cross if it isn't (✓ or X)	Rock cycle product I can see:	
Weathering - break up or break down in situ with no movement of material away [three types working separately or together - physical, chemical, biological]	Physical weathering - breaking up of material, eg. by freeze/thawing or by heating/cooling		Physically weathered material I can see:	
	Chemical weathering - chemical breakdown of material, often shown by surface colour changes		Chemically weathered material I can see:	
	Biological weathering - by roots of plants or micro-organisms in the soil		Evidence of biological weathering I can see:	
Erosion/ transportation - the removal of material/ the beginning of transportation [four agents working separately or together - wind, gravity, water, ice]	Wind erosion/ transportation		Evidence of wind erosion/ transportation I can see:	
	Gravity erosion/ transportation		Evidence of gravity erosion/ transportation I can see:	
	Water erosion/ transportation		Evidence of water erosion/ transportation I can see:	
	Ice erosion/ transportation	X - ice erosion/ transportation doesn't occur in the UK today	Evidence of ice erosion/ transportation I can see:	None - only occurs when ice flows over the surface

Turn over

Rock cycle activity	Rock cycle process	Tick if this is happening now, cross if it isn't (✓ or X)	Rock cycle product I can see:	
Deposition - material being laid down [by agents of transportation: wind, gravity, water, ice]	Wind deposition		Evidence of wind deposition I can see:	
	Gravity deposition		Evidence of gravity deposition I can see:	
	Water deposition		Evidence of water deposition I can see:	
	Ice deposition	X - ice deposition doesn't occur in the UK today	Evidence of ice deposition I can see:	None - only occurs when ice has flowed over the surface in the past

2. What might you see outside - if you looked through the right window?

Where on Earth might you look through a window to see a rock cycle process happening - *or a rock cycle product (shown in italics)? The first has been done to help you.*

Rock cycle process or product	• Where I might see it through a window
Ice eroding, transporting and depositing	<i>View of a glacier</i>
<i>Sediments deposited by ice</i>	
<i>Sediments deposited by water</i>	
<i>Sediments changed into rocks by cementation/compaction</i>	
Metamorphic processes in action	<i>These could never be seen through the window because they happen deep in the Earth, usually as mountains are being formed on the surface</i>
<i>Rocks that have been metamorphosed (formed by metamorphic processes)</i>	
Rocks melting	<i>This could never be seen through the window because it happens deep in the Earth</i>
<i>Molten rock</i>	
Igneous processes in action	
<i>Rocks formed by igneous processes</i>	
Rocks fracturing under great Earth pressures	
<i>Rocks deformed by great Earth pressures</i>	

KS3 Earth science through the window – teacher sheet

1. What can you see outside today?

What rock cycle processes are happening today? What products have they left?

Some possible answers are given below.

Rock cycle activity	Rock cycle process	Tick if this is happening now, cross if it isn't (✓ or X)	Rock cycle product I can see:	
Weathering - break up or break down in situ with no movement of material away [three types working separately or together - physical, chemical, biological]	Physical weathering - breaking up of material, eg. by freeze/thawing or by heating/cooling	Ticked only if it is freezing/thawing outside	Physically weathered material I can see:	<ul style="list-style-type: none"> • Wall brick or stone cracked by freezing and thawing • Surfaces of bricks/stones breaking away (spalling) due to freeze thaw
	Chemical weathering - chemical breakdown of material, often shown by surface colour changes	Ticked - even if it is not raining or the ground is wet - chemical activity of water in the pore spaces of permeable bricks/rocks will be causing slow breakdown	Chemically weathered material I can see:	<ul style="list-style-type: none"> • White stains on walls where calcium carbonate has been dissolved and redeposited • Blackened surfaces where pollution has produced iron sulphides
	Biological weathering - by roots of plants or micro-organisms in the soil	Ticked if any plants or soil are visible	Evidence of biological weathering I can see:	<ul style="list-style-type: none"> • Soil is a product of biological weathering • The rootlets from lichens or mosses will be causing biological weathering • The roots of any plants will be forcing rock or soil apart
Erosion/ transportation - the removal of material/ the beginning of transportation [four agents working separately or together - wind, gravity, water, ice]	Wind erosion/ transportation	Ticked if wind is blowing	Evidence of wind erosion/ transportation I can see:	<ul style="list-style-type: none"> • The wind picking up and moving anything
	Gravity erosion/ transportation	Only ticked if anything is seen falling, eg leaves from trees in autumn	Evidence of gravity erosion/ transportation I can see:	<ul style="list-style-type: none"> • Falling objects/leaves
	Water erosion/ transportation	Ticked if water is flowing during/ after rain	Evidence of water erosion/ transportation I can see:	<ul style="list-style-type: none"> • Water picking up and moving anything, as it flows over the ground or in gutters
	Ice erosion/ transportation	X - ice erosion/ transportation doesn't occur in the UK today	Evidence of ice erosion/ transportation I can see:	<ul style="list-style-type: none"> • None - only occurs when ice flows over the surface
Deposition - material being laid down [by agents of transportation: wind, gravity, water, ice]	Wind deposition	Ticked if the wind is blowing - if it is, there must be areas where eroded dust at least is being deposited	Evidence of wind deposition I can see:	<ul style="list-style-type: none"> • Drifts of leaves • Drifts of litter

	Gravity deposition	Ticked if things can be seen that have fallen to the ground and not moved, eg. leaves/ twigs/ litter	Evidence of gravity deposition I can see:	<ul style="list-style-type: none"> • Sediment particles at the foot of walls • Leaves/twigs on the ground • Litter on the ground
	Water deposition	Ticked if water is flowing - if it is, there must be areas where eroded mud at least is being deposited	Evidence of water deposition I can see:	<ul style="list-style-type: none"> • Sediment in gutters • Leaves/twigs washed into piles
	Ice deposition	X - ice deposition doesn't occur in the UK today	Evidence of ice deposition I can see:	<ul style="list-style-type: none"> • None - only occurs when ice has flowed over the surface in the past

2. **What might you see outside - if you looked through the right window?** Where on Earth might you look through a window to see a rock cycle process happening - *or a rock cycle product (shown in italics)?*
The first has been done to help you.

Some possible answers are given below.

Rock cycle process <i>or product</i>	Where I might see it through a window
Ice eroding, transporting and depositing	<ul style="list-style-type: none"> • <i>View of a glacier</i>
<i>Sediments deposited by ice</i>	<ul style="list-style-type: none"> • View of glacial deposits (eg moraine)
<i>Sediments deposited by water</i>	<ul style="list-style-type: none"> • View of river or beach deposits
<i>Sediments changed into rocks by cementation/compaction</i>	<ul style="list-style-type: none"> • View of a mountain/ cliff/ quarry/ cutting of sedimentary rocks
Metamorphic processes in action	<ul style="list-style-type: none"> • <i>These could never be seen through the window because they happen deep in the Earth, usually as mountains are being formed on the surface</i>
<i>Rocks that have been metamorphosed (formed by metamorphic processes)</i>	<ul style="list-style-type: none"> • View of a mountain/ cliff/ quarry/ cutting of metamorphic rocks
Rocks melting	<ul style="list-style-type: none"> • <i>This could never be seen through the window because it happens deep in the Earth</i>
<i>Molten rock</i>	<ul style="list-style-type: none"> • View of lava flowing from a volcano
Igneous processes in action	<ul style="list-style-type: none"> • View of an erupting volcano - erupting, lava, bombs or ash
<i>Rocks formed by igneous processes</i>	<ul style="list-style-type: none"> • View of a volcano • View of a mountain/ cliff/ quarry/ cutting of igneous rocks
Rocks fracturing under great Earth pressures	<ul style="list-style-type: none"> • View of an earthquake - as the house with its window collapses!
<i>Rocks deformed by great Earth pressures</i>	<ul style="list-style-type: none"> • View of a mountain/ cliff/ quarry/ cutting showing folding or faulting